City and County of San Francisco
San Francisco City Planning Commission

Draft

Environmental Impact Report

POST/MASON HOTEL

81.400E

DOCUMENTS DEPT.
APR 25 1983
SAN FRANCISCO

Publication Date: April 15, 1983
Public Comment Period: April 15-May 19, 1983
Public Hearing Date: May 19, 1983

D
REF
711.557
OL93d

Written Comments should be sent to the Environmental Review Officer, 450 McAllister Street, San Francisco. CA 94102

5/S

SAN FRANCISCO
PUBLIC LIBRARY

REFERENCE
BOOK

Not to be taken from the Library

SAN FRANCISCO PUBLIC LIBRARY
3 1223 03703 5012

City and County of San Francisco
San Francisco City Planning Commission

Draft

Environmental Impact Report

POST/MASON HOTEL

81.400E

Publication Date: April 15, 1983
Public Comment Period: April 15-May 19, 1983
Public Hearing Date: May 19, 1983

Written Comments should be sent to the Environmental Review Officer, 450 McAllister Street, San Francisco. CA 94102

D REF 711.557 OL93d

Post/Mason Hotel : draft
environmental impact
1983.
S.F. PUBLIC LIBRARY

3 1223 03703 5012

POST/MASON HOTEL ENVIRONMENTAL IMPACT REPORT

TABLE OF CONTENTS

		Page
I.	SUMMARY	1
II.	PROJECT DESCRIPTION	7
	A. Sponsor's Objectives	7
	B. Project Location	7
	C. Project Description	7
	D. Project Schedule and Cost	11
	E. Required Permits and Actions	18
	F. History of the Site	19
III.	ENVIRONMENTAL SETTING	20
	A. Land Use and Planning	20
	B. Urban Design and Architectural Resources	26
	C. Transportation, Circulation, and Parking	28
	D. Air Quality	33
	E. Construction Noise	33
	F. Seismicity and Hydrology	34
	G. Employment, Housing, and Fiscal Issues	36
IV.	ENVIRONMENTAL IMPACT	39
	A. Land Use and Planning	39
	B. Urban Design and Architectural Resources	41
	C. Transportation, Circulation, and Parking	53
	D. Air Quality	61
	E. Construction Noise	64
	F. Seismicity and Hydrology	68
	G. Energy	70
	H. Employment, Housing, and Fiscal Issues	75
	I. Growth Inducement	83
V.	MITIGATION MEASURES THAT WOULD MINIMIZE THE POTENTIAL IMPACTS OF THE PROJECT	85
VI.	SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROJECT IS IMPLEMENTED	92
VII.	ALTERNATIVES TO THE PROPOSED PROJECT	93
VIII.	EIR AUTHORS, CONSULTANTS; ORGANIZATIONS AND PERSONS CONSULTED	106
IX.	DISTRIBUTION LIST	108
X.	APPENDICES	114
	A. Final Initial Study	115
	B. Wind Tunnel Study	148
	C. Architectural Evaluation Systems	163
	D. Cumulative Office Development	165
	E. San Francisco Air Contaminant Summary, 1979-1981	178
	F. Fundamental Acoustical Concepts	179
	G. Seismic Zonation Maps	183

POST/MASON HOTEL ENVIRONMENTAL IMPACT REPORT
TABLE OF CONTENTS

List of Figures

		Page
1.	Site Location	8
2.	Project Site and Vicinity	9
3.	View of Existing Site from Intersection of Post and Mason Streets	10
4.	Street Level Plan	12
5.	Lobby Level Plan	13
6.	Post and Mason Street Sections	14
7.	Typical Guest Room Level Plan	15
8.	Observation Level Plan	16
9.	Post Street Elevation	17
10.	Existing Land Use	21
11.	Hotels in the Project Vicinity	22
12.	Planning Code Use Districts	24
13.	Planning Code Height and Bulk Districts	25
14.	Architectural Resources in the Project Vicinity	29
15.	Muni and BART Routes in the Project Area	30
16.	View of the Project from Twin Peaks	42
17.	View of the Project Looking Northwest from Southeast Corner of Post and Mason St. Intersection	43
18.	View of the Project Looking North from Mason and Geary Streets	45
19.	View of the Project Looking East from Post and Taylor Streets	46
20.	Building Heights in the Project Vicinity	48
21.	Shadow Patterns in Project Vicinity, 12 noon P.S.T.,	
	A. March 22nd/September 24th	49
	B. June 22nd	50
	C. December 22nd	51
22.	Projected Electrical Load Distribution	73
23.	Projected Natural Gas Load Distribution	74
24.	GDD Alternative	95
25.	Code Conformance Alternative	98
26.	Residential Alternative	100
27.	Reduced Bulk Alternative	103

List of Tables

		Page
1.	Distribution of Property Tax Revenues, 1981-1982	38
2.	Relationship of Street-Level Wind Speeds to Freestream Wind Speeds	52
3.	Projected P.M. Peak-Hour Project Travel	55
4.	Projected Daily Vehicular Project Travel	56
5.	Afternoon Peak-Hour Outbound Transit Ridership	57
6.	Operating Conditions at Intersections	59
7.	Projected Roadside Carbon Monoxide Concentrations	63
8.	Projected Air Pollutant Emissions of the Project	63
9.	Typical Commercial/Industrial Construction Noise Levels	65
10.	Projected Interior Noise Levels	66
11.	Estimated Annual Expenditures by Hotel Guests	78
12.	Projected Distribution of Property Tax Revenues	79
13.	Summary of Projected Taxes the Proposed Hotel Would Generate to San Francisco in 1985	80

I. SUMMARY

A. PROJECT DESCRIPTION (see Chapter II, pp. 7-19).

Portman Properties proposes to construct a 350-room hotel near Union Square in San Francisco. The project site is Lots 4 and 5 of Assessor's Block 297. Lot 5 contains the Olympic Club, an athletic club built in 1912, which would be retained. Lot 4, at the northwest corner of Post and Mason Sts., would be the building site for the hotel. Both lots are owned by the Olympic Club.

The proposed hotel would be about 260 ft. high and about 137 ft. by 137 ft. in plan dimension. The building would be a single, rectangular tower without step-backs or cut-outs, clad in pre-cast concrete and brown brick. The facade would feature recessed keystone arches similar to those of the adjacent Olympic Club building, and would continue some of the horizontal lines of that structure. Part of the hip roof would be made of translucent panels for daylighting of observation deck and atrium space.

The proposed hotel would be 21 stories above grade, with 5 subsurface parking levels. The street level would have a passenger dropoff, loading docks, elevators, and service entrances as well as access ramps to the parking levels. The ballroom level, which would also contain meeting rooms, would be the first floor above street level. The lobby level would be 2 floors above street level and would have a registration desk, a restaurant, a coffee shop, a bar, and other related hotel amenities. The mezzanine level, above the lobby, would contain hotel services, a beauty shop, and a health club. There would be 16 guest-room levels above. The 21st floor, the top floor, would have an observation area, a restaurant, and a bar.

The approximately 315,000 gross sq.-ft. project would include about 1,000 sq. ft. of retail space, about 9,000 sq. ft. of restaurant space, and about 305,000 sq. ft. of guest rooms and other hotel uses. The 5 subsurface levels would contain an additional 74,000 sq. ft. to provide 140 parking spaces; the top 2 subsurface levels would also contain hotel service space (workshop, storage, and employee areas).

After certifying the Final Environmental Impact Report (FEIR) for the project, the City Planning Commission will hold a Conditional Use hearing to approve or reject floor area bonuses and non-accessory parking for the project. If the project were approved, construction would begin in early 1984 and would be completed within about 24 to 30 months. Initial project occupancy would be scheduled for 1986.

B. ENVIRONMENTAL SETTING (see Chapter III, pp. 20-38).

The project block is 1 block west of Union Square, and bounded by Mason, Post, Taylor, and Sutter Sts. The 42,281 sq. ft. project site, with frontage on Mason and Post Sts., is occupied by a 3-story parking garage with about 200 parking spaces, on Lot 4, and the Olympic Club, on Lot 5. It is within the City's C-3-G (General Commercial) Use District and its 240-H Height and Bulk District. Only the approximately 200-space parking garage, with its rental car and parking uses, would be displaced by the project; the Olympic Club would be retained, although it may be renovated and reinforced in the future for seismic safety.

C. ENVIRONMENTAL IMPACTS (see Chapter IV, pp. 39-84).

The Initial Study of the project (see Appendix A, p. 115) determined that the project as originally proposed, incorporating those mitigation measures identified in the Initial Study, would have no significant effects on lighting and glare, operational noise, utilities and community services, biology, land use, water (except for dewatering during construction), hazardous uses and health hazards (except for potential hazard of falling glass), or archaeological resources. These issues were focused out of the EIR as permitted by the California Environmental Quality Act of 1970 (State EIR Guidelines, Section 15080(b)(3)) and require no further discussion. Not all issues addressed in this EIR are physical impacts as defined under CEQA; these non-physical issues are included here for informational purposes only.

Land Use and Planning (see Chapter IV.A, p. 39). The project would be generally responsive to policies for the C-3-G (Downtown General Commercial) Use District. The structure would be within height and bulk limitations of the Planning Code. The project's Floor Area Ratio (FAR, or ratio of total gross floor area of site buildings to site area) would be about 10.7:1. This increase over the permitted basic FAR of 10:1 for the C-3-G district could be granted because the project would qualify for floor area bonuses by

providing a rooftop observation deck, parking access, multiple building entrances, shortened walking distance, and expanded sidewalk area. The project would require Conditional Use authorization for parking, since the amount requested would be more than that allowed as an accessory use in Section 204.5(c) of the City Planning Code.

The project would be mostly similar to, and compatible with, existing adjacent land uses. Several hotels, restaurants, and other tourist and entertainment-oriented businesses are located in the project vicinity. Several additional hotels to be located in the project vicinity are under construction, approved, or under review. The project would strengthen the tourist-oriented character of the blocks immediately west of Union Square. While the approved Hotel Ramada, Hilton Tower No. 2, and Holiday Inn are expected to make existing businesses in the eastern North of Market Area (which is south of the project site) more tourist-oriented, the overall variety of uses in the North of Market area would remain. The approximately 350-room hotel could contribute to this tourist-oriented conversion of retail uses in proportion to its size. Cumulative hotel development in the project vicinity could also increase economic pressure on land values in the eastern North of Market area.

Urban Design and Architectural Resources (see Chapter IV.B, p. 41). The project would require demolition of the 3-story parking garage on Lot 4 of the site. The proposed structure would be taller than other buildings on abutting lots (including those facing the site across Mason and Post Sts.). The massing and facade treatment of the proposed hotel project, however, would be similar to that of older, nearby buildings such as the Olympic Club, the Bohemian Club, the Marines Memorial building, and the Medico-Dental building.

During most times of the day and year, the project's shadow would coincide with existing shadows, and little new shade would be created. The project would not shade any parks or other public open space. The project would modify the local wind flow pattern and would increase the wind speed ratios in Union Square slightly. Street level winds would remain similar to existing conditions in some locations, but would increase in other locations.

Transportation, Circulation, and Parking (see Chapter IV.C, p. 53). The proposed hotel would generate an average of about 850 vehicle trips per day. About 80 of these would occur between 4:00 and 6:00 p.m., the peak travel time for project traffic. The project

would also generate about 30 additional peak-hour trips on public transit, and would generate about 10 additional taxi and about 1 additional charter or tour bus trip during the peak hour. Pedestrian traffic at the Post and Mason St. intersection and on sidewalks fronting the site would increase about 50%, but pedestrian travel would remain unimpeded and would not affect vehicular ingress and egress at the site. The project would create new demand locally for parking, and would result in a net reduction of about 60 parking spaces.

Air Quality (see Chapter IV.D, p. 61). State standards for particulate (dust) concentrations would be exceeded during the demolition, excavation, and foundation preparation stages of the project. Once completed, project-generated traffic would contribute to existing ambient concentrations of carbon monoxide (CO), particulate, volatile hydrocarbons, nitrogen oxides, and sulfur oxides. Existing CO concentrations are close to the 8-hour state and federal standard, so increases in traffic would increase the likelihood of future violations of this standard. Project-generated emissions, however, would have no measurable impact on city wide or regional air pollutant concentrations.

Construction Noise (see Chapter IV.E, p. 64). Project construction would temporarily increase noise levels in areas adjacent to the project site. Workers in buildings adjoining the site would experience noise ranging from 71 to 80 dBA with windows closed, and up to 101 dBA for short periods during pile driving. Noise levels in the building nearest the project site, the Marines Memorial building, could occasionally exceed 80 dBA during construction.

Seismicity and Hydrology (see Chapter IV.F, p. 68). During an earthquake, ground shaking may cause bookcases and other unattached objects within the proposed hotel to fall; windows may break, showering glass onto sidewalks and streets. Brick cladding may also fall on streets and sidewalks around the project. Fixtures in the central atrium may fall, creating a hazard for hotel guests and employees. Dewatering would be required during construction. This could induce local subsidence, causing walls of older brick and masonry buildings, such as the Olympic Club, to crack or lean and floors to be bent or tilted.

Energy (see Chapter IV.G, p. 70). Construction energy requirements would be about 360 billion Btu. During operation, the proposed hotel's annual energy budget would be

about 60 billion Btu, or about 193,000 Btu per sq. ft. The project would make use of solar energy by installing translucent panels in the roof of the new structure for daylighting of the upper levels. Based on vehicle fleet fuel economy estimates for 1987, project-generated transportation would cause additional off-site energy consumption of about 12 billion Btu annually.

Employment, Housing, and Fiscal Issues (see Chapter IV.H, p. 75). The project would create about 320 permanent, full-time jobs, while eliminating about 30 permanent, full-time jobs. The project would also provide about 640 person-years of construction employment during construction.

The property tax, sales tax, transit tax, parking tax, and hotel tax revenues to the City from the proposed hotel would total about $2.7 million per year. Although the project would displace 2 revenue-generating uses from the site and project employees and guests would generate Muni and BART deficits, the project would provide an initial net fiscal benefit to the City, based on the analysis set forth in Chapter IV.H, p. 75.

Growth Inducement (see Chapter IV.I, p. 83). The project would increase the hotel room supply in downtown San Francisco by about 350 rooms. It would not require any infrastructural improvements that would open or intensify land development opportunities. The project would indirectly affect local growth by providing about 320 new jobs, a small portion of which would be filled by people new to the Bay Area.

C. MITIGATION MEASURES (see Chapter V, pp. 85-91).

Various measures have been identified in the Initial Study and in this report that would reduce or eliminate potentially significant environmental impacts of the proposed project. The City Planning Commission could require any of these measures as conditions of project approval. Mitigation measures proposed as part of the project, but that are not required by statutes or laws include coordinating construction activities, passive use of solar energy for daylighting through the roof panels, wetting down construction areas twice daily to reduce dust emissions, enclosing mechanical equipment to reduce noise, recycling, and installing operable windows.

ALTERNATIVES TO THE PROPOSED PROJECT (see Chapter VII, pp. 93-105).

Alternative A is the No Project alternative. Should this alternative be implemented, the site conditions and uses would remain the same as at present, providing 200 public parking stalls.

Alternative B would be a hotel that conformed with the development controls suggested in Guiding Downtown Development. This alternative would be 100 ft. high and would contain about 154,000 sq. ft., including about 150 guest rooms.

Alternative C would be a hotel similar to the proposed project, but for which no conditional use permit would be required and no bonuses would be claimed. This alternative would be about 255 ft. high and would contain about 287,000 sq. ft., including about 330 guest rooms. It would also have street level retail uses.

Alternative D would be a high-density residential development. This alternative would be about the same height as the proposed project but would be narrower to allow for a rear yard on the northern frontage. The gross floor area of this alternative, containing about 150 apartment units, would be about the same as that of the proposed project.

Alternative E would be a hotel with no atrium and stepbacks from the Post St. frontage. This reduced bulk alternative would be about 250 ft. high, would have 330 guest rooms, and would contain about 306,000 sq. ft. It would have the same amount of underground parking as the proposed project.

Alternative F would be a hotel similar to the proposed project except that it would provide 200 parking stalls instead of the proposed 140.

A. SPONSOR'S OBJECTIVES

Portman Properties proposes to construct a 21-story hotel with about 350 rooms near Union Square in San Francisco. The project would increase the supply of hotel accommodations at the very top of the market, providing luxury accommodations for small groups, businesses, and independent travelers. Further objectives of the project sponsor are to obtain a fair rate of return on investment capital and a source of income to the Olympic Club for renovation and seismic reinforcement of their existing building.

B. PROJECT LOCATION

The project site is Lots 4 and 5 in Assessor's Block 297, bounded by Post, Sutter, Taylor, and Mason Sts. (see Figures 1 and 2, pp. 8 and 9). The 42,281 sq.-ft. project site fronts on Mason and Post Sts. It is in the C-3-G (Downtown General Commercial) Use District and the 240-H Height and Bulk District.

C. PROJECT DESCRIPTION

The project site is occupied by a 3-story parking garage, on Lot 4, and by the Olympic Club, on Lot 5 (see Figure 3, p. 10). The Olympic Club would be retained; it may be renovated and seismically reinforced in the future. The proposed hotel would be constructed solely on Lot 4, removing the existing parking garage structure and displacing its tenant (see Chapter III.A, p. 20).

The proposed hotel would be a 260-ft. high rectangular tower conforming to the allowable height limit (refer to p. 41), with a hip roof; it would contain about 315,000 gross sq. ft., exclusive of parking. The structure would be built out to the lot lines with plan dimensions of 137 ft. length by 137 ft. width and a maximum diagonal dimension of 194 ft.

LEGEND

Union Square Hotel District
(San Francisco Convention and Visitors Bureau)

FIGURE 1: Site Location

SOURCE: Environmental Science Associates, Inc.

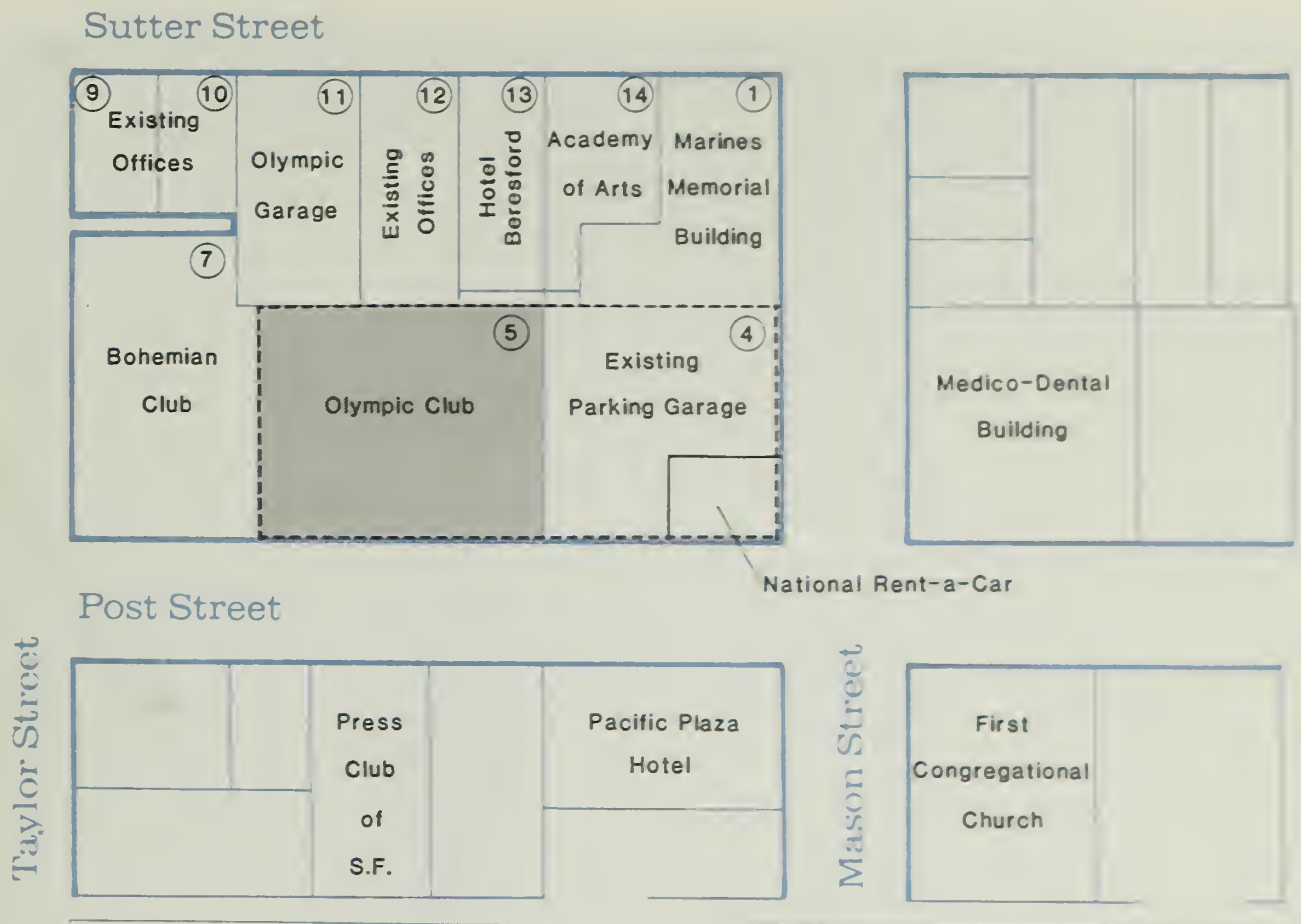


FIGURE 2: Project Site and Vicinity

SOURCE: Environmental Science Associates, Inc.

Olympic Club
524 Post St.
90'

PROJECT SITE

Marines Memorial
609 Sutter St.
210'

FIGURE 3: View of Existing Site from Intersection of Post and Mason Streets

SOURCE: Environmental Science Associates, Inc.

Street entrances would lead into an inner court; one entrance would be on Post St. and the other would be on Mason St. (see Figure 4, p. 12), each set back about 70 ft. from the curb. Vehicular access would be from both Post and Mason Sts. An entrance drive would lead down to 5 levels of parking providing about 140 parking spaces. An entry court in front of the building entrance would permit vehicles to pick up and drop off passengers. An employee entrance and 4 fire exits would be located on Mason St. Loading docks, with 2 truck stalls, would also be located on Mason St. (see Figure 4, p. 12). A trash pickup would be located next to the loading dock.

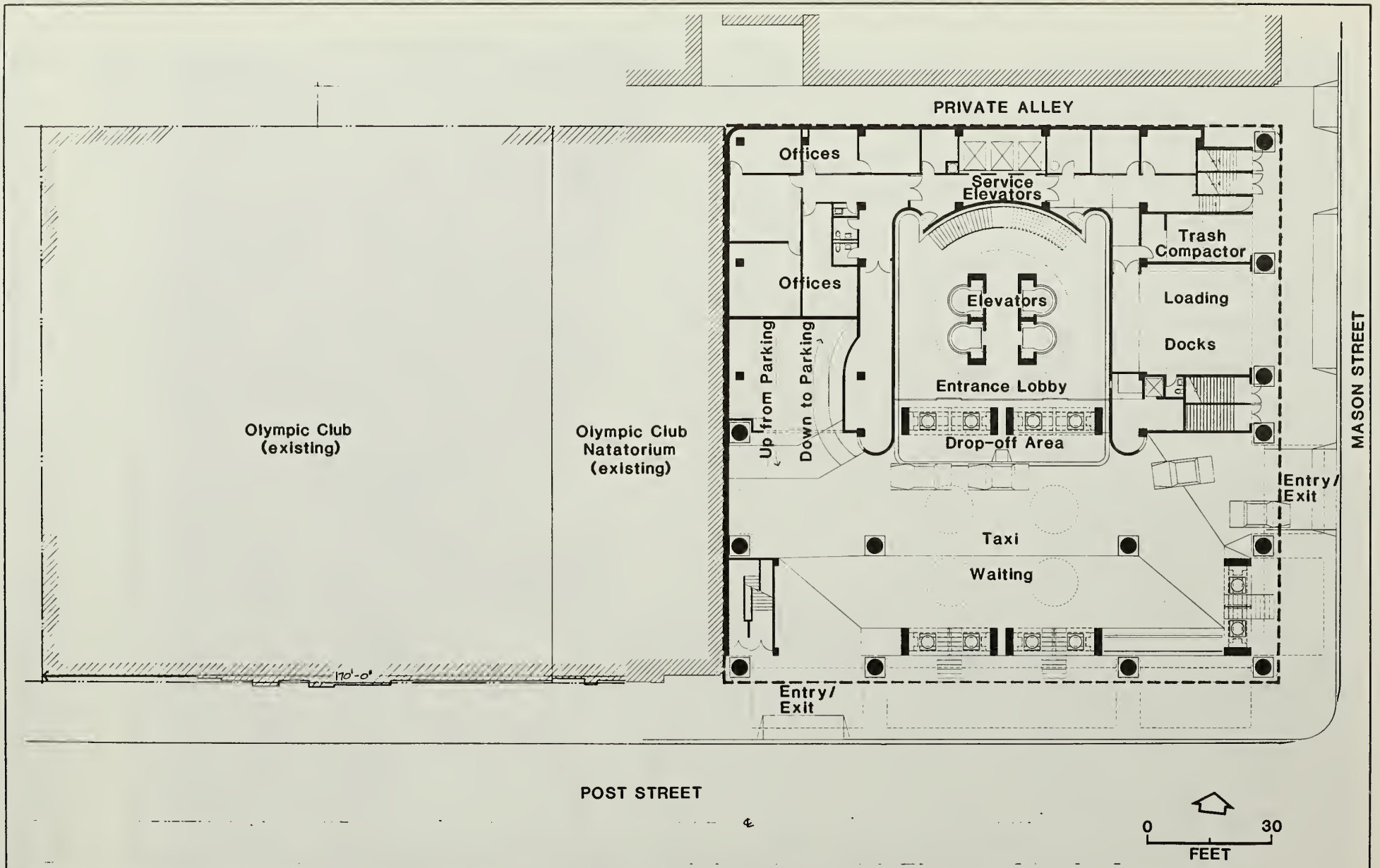
The second level of the building would have a ballroom and meeting rooms, and the third level would be the hotel lobby (see Figures 5, 6 and 7, pp. 13-15). The fourth floor would be a mezzanine level containing mechanical space, a health club, a beauty salon, and administrative offices. A central atrium would rise from the lobby level to the observation deck on the 21st floor. Four elevators rising through this atrium space would provide access to each building level above the street level (see Figures 5, 6 and 7, pp. 13-15). Guest rooms would be located on floors 5 through 20 (See Figure 7, p. 15). An observation deck with a restaurant and bar would be located on the 21st floor (see Figure 8, p. 16). The glass-enclosed observation deck would create a clerestory effect, permitting natural light to enter the observation level and atrium below.

The building exterior would be reddish-brown brick and concrete similar in color and texture to that of the adjacent Olympic Club. The arched windows, each with its own planterbox, would be inset from the facade lines (see Figure 9, p. 17). Except for the windows on the street and ballroom levels, which would contain clear glass, the windows would contain solar glass. Trees and sidewalk plantings would provide street-level interest.

D. PROJECT SCHEDULE AND COST

The project sponsor expects environmental review and project design to be completed by mid-1983. The construction period would last about 24 to 30 months. Initial occupancy is projected for 1986.

Construction costs are estimated at about $48 million (1982 dollars).



LEGEND

----- Lot 4 lot line

SOURCE: Portman Properties

FIGURE 4: Street Level Plan

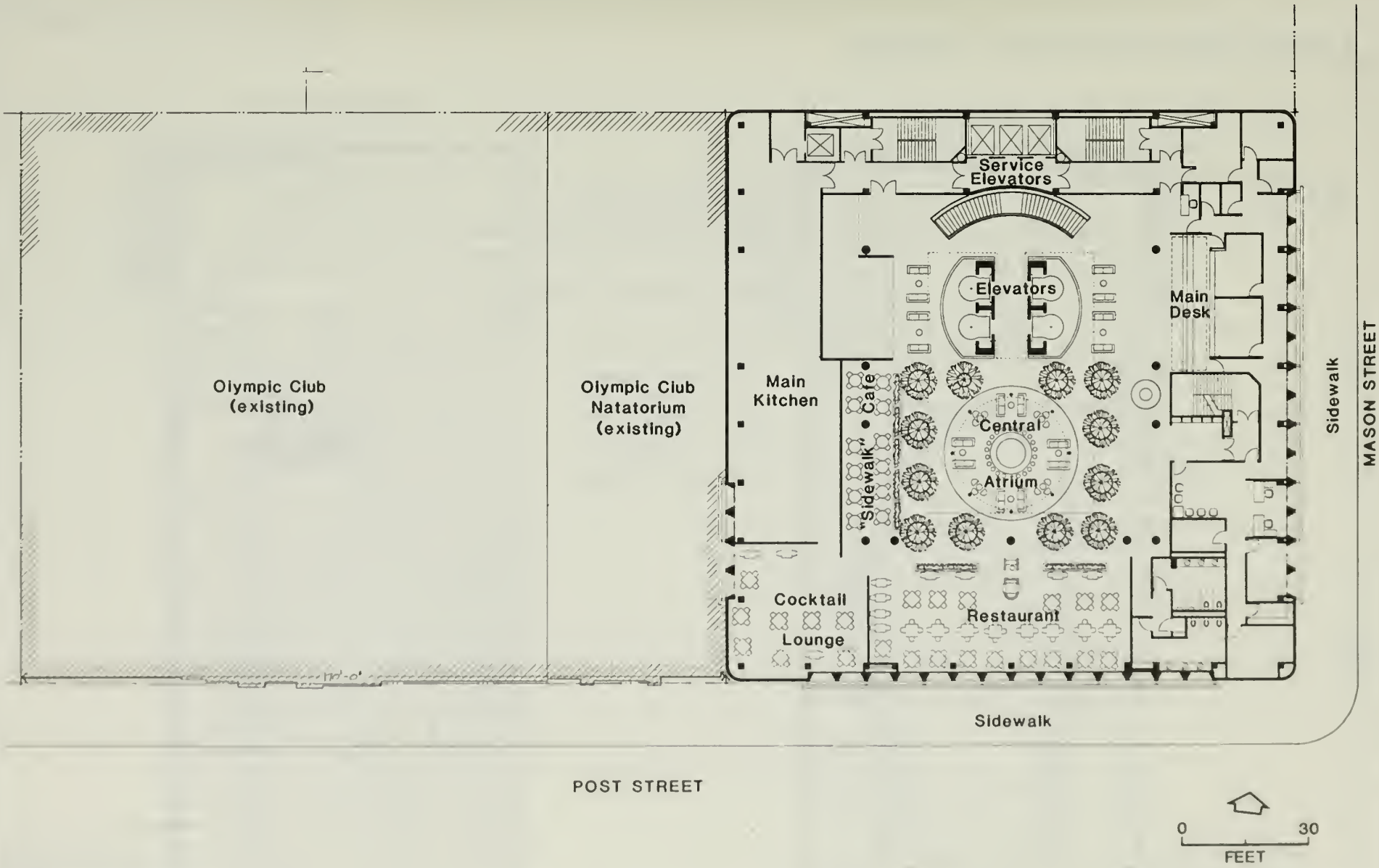
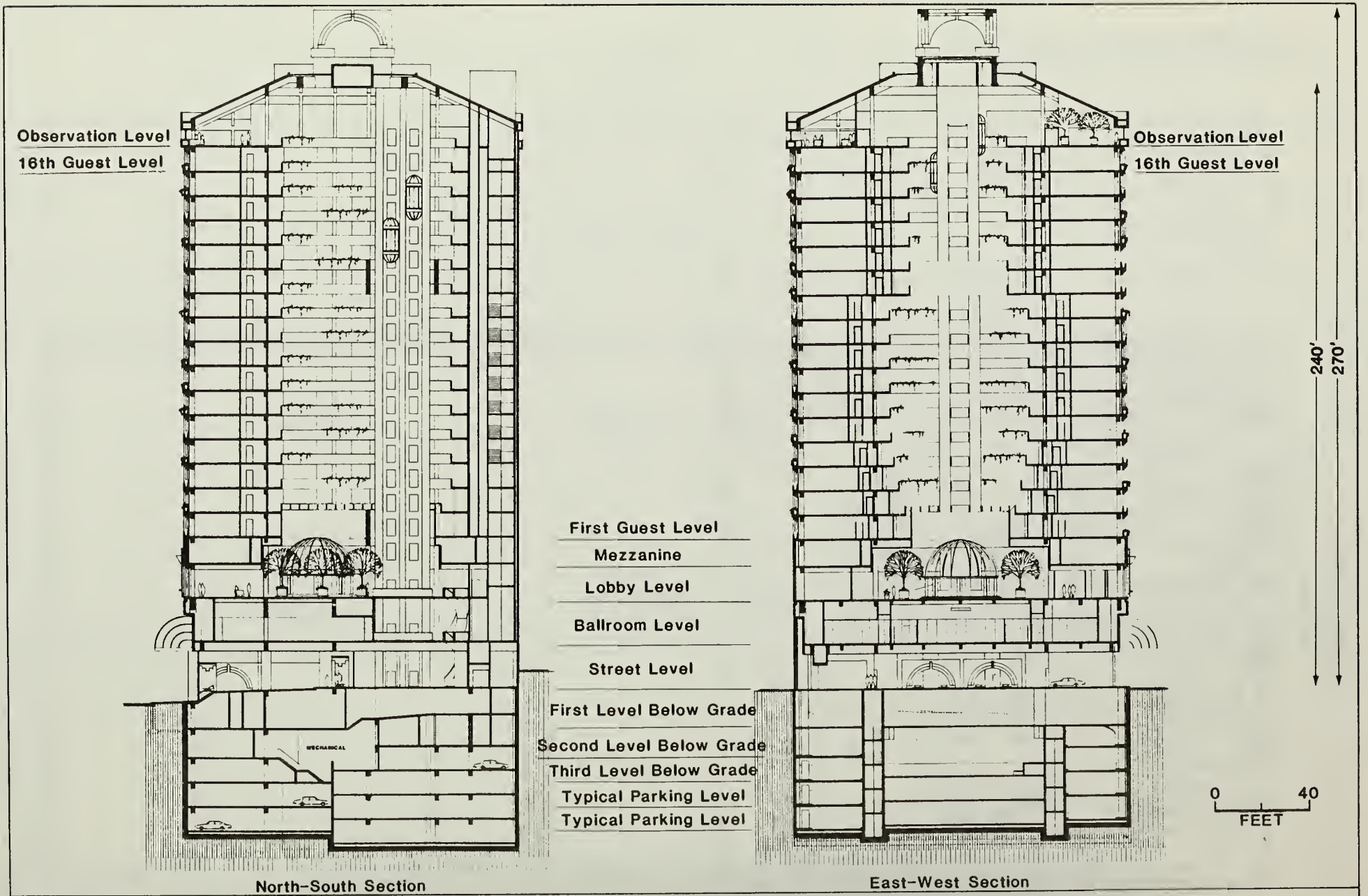


FIGURE 5: Lobby Level Plan

SOURCE: Portman Properties



SOURCE: John Portman & Associates

FIGURE 6: Post and Mason Street Sections

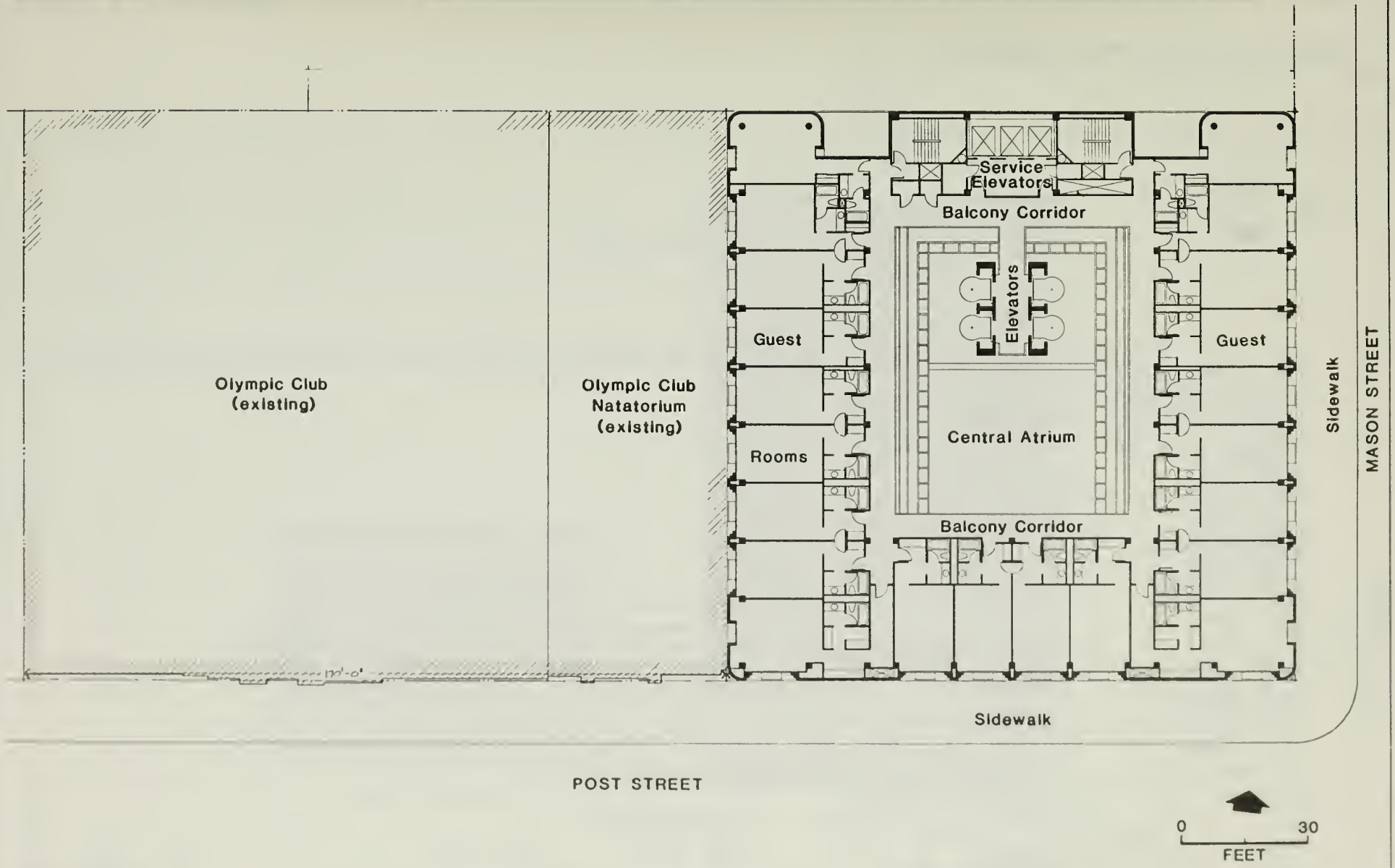


FIGURE 7: Typical Guest Room Level Plan

SOURCE: Portman Properties

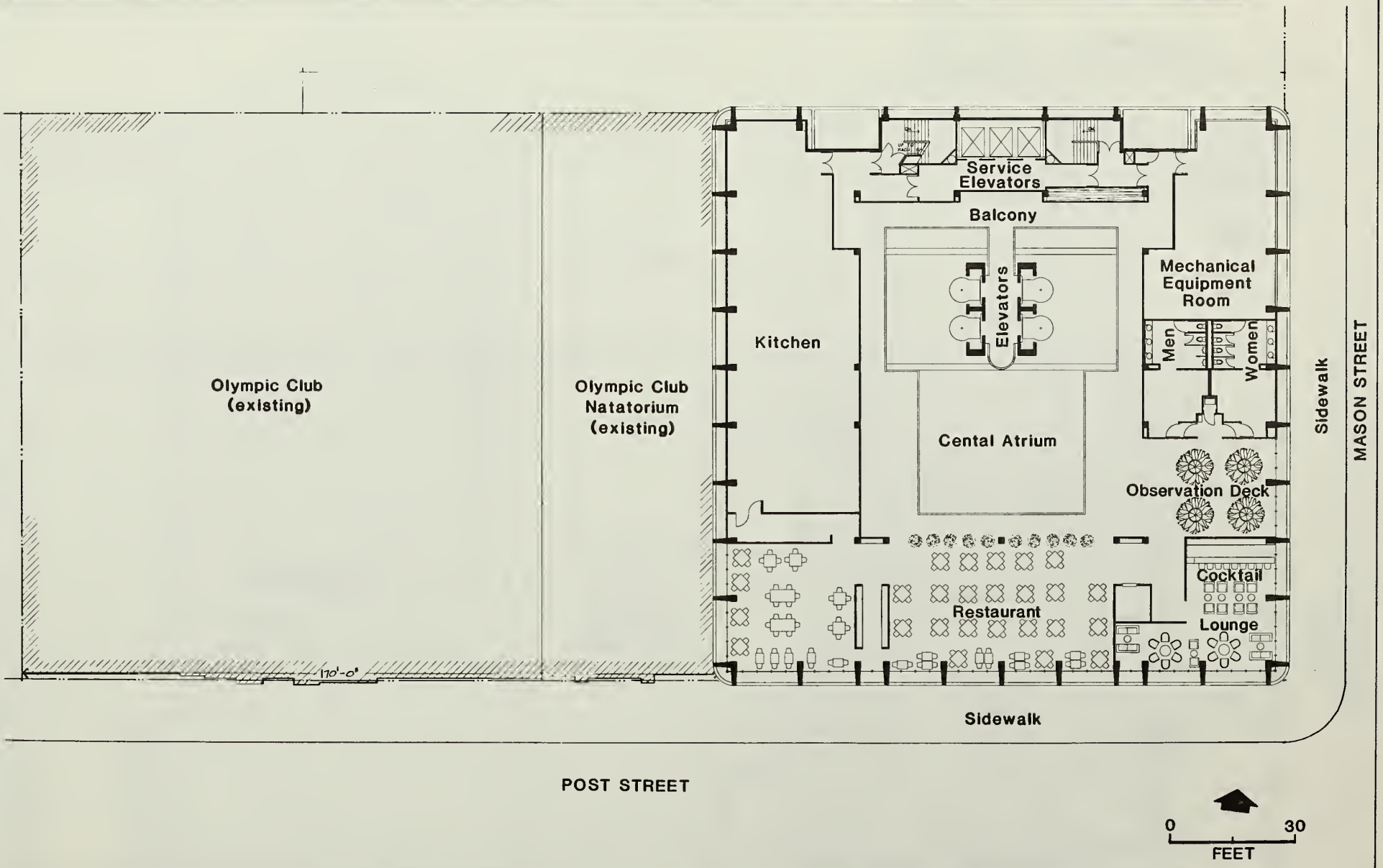


FIGURE 8: Observation Level Plan

SOURCE: Portman Properties

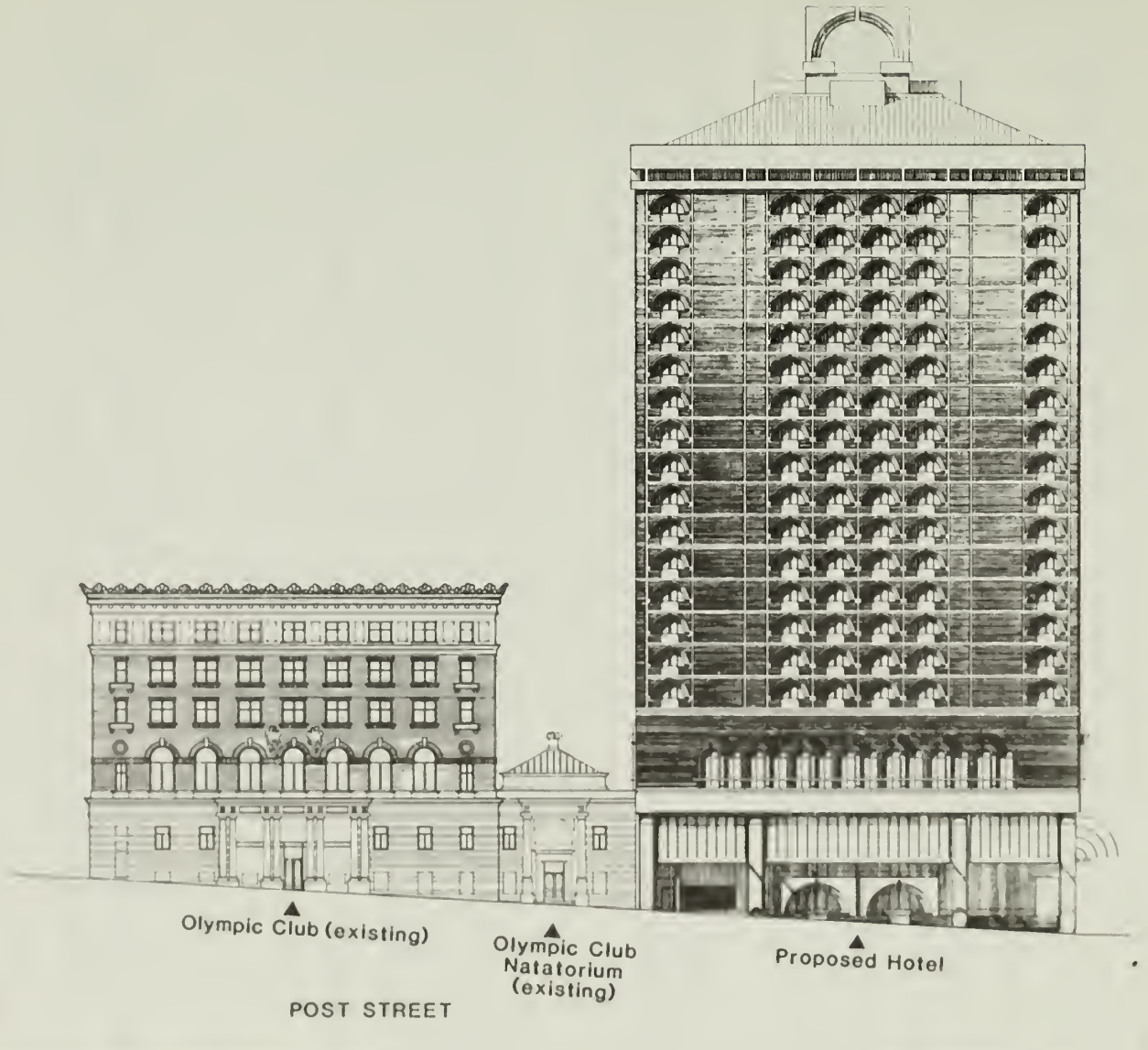


FIGURE 9: Post Street Elevation

SOURCE: Portman Properties

E. REQUIRED PERMITS AND ACTIONS

The first step in processing the project in compliance with state and local policies and laws is to file an application for environmental evaluation of the project. This is followed by the preparation of an Initial Study (see Appendix A, p. 115), which the Office of Environmental Review uses to determine which, if any, of the project's environmental impacts require further analysis. This leads to the preparation, publication, and public review of the Draft Environmental Impact Report (DEIR). Following a public hearing on the DEIR before the City Planning Commission and at the close of the public review period, responses to all written and oral comments will be prepared in the Summary of Comments and Responses to Comments. After review of the Summary of Comments and Responses to Comments, the City Planning Commission certifies the EIR as accurate and complete. The Commission would then consider action on the project. No permits may be issued until the Final EIR is certified.

Interim Controls on the use of floor area bonuses were formally adopted by the San Francisco Board of Supervisors on May 27, 1980 as an amendment to Section 126 of the City Planning Code. These controls specify that floor area bonuses described in Section 126 are allowable only for residential and hotel uses. Earlier in 1980, the City Planning Commission established a policy of Discretionary Review of development proposals for new construction or alterations that would increase floor area in the Interim Downtown Special Use District during the Interim Control period./1/ Under this policy, the Commission will review the project design and its environmental context in detail, and adopt a resolution approving, approving with conditions, or disapproving the project. To comply with the Interim Controls of the City Planning Code currently in effect, the project would require a conditional use authorization for the bonus floor area requested. Mitigation measures included in this EIR can be used as conditions for approval of the project. The project would also require a Conditional Use authorization for about 42,500 sq. ft. of parking space, since Section 204.5(c) of the City Planning Code limits the accessory parking facilities allowed in a new development in a C-3 district to 7% of the gross floor area.

Should approval be granted by the City Planning Commission, the project sponsor would obtain a demolition permit from the Central Permit Bureau of the Department of Public Works, followed by a building permit. or permits, administratively approved for

compliance with fire, electrical, building, and other pertinent City codes. Prior to the issuance of a site or building permit, the project sponsor would record a deed restriction to establish Lots 4 and 5 as 1 zoning lot under Section 102.12 of the City Planning Code, in order to combine their development rights.

F. HISTORY OF THE SITE

The first Olympic Club building was constructed on the site in 1892. This pre-fire Olympic Club was characterized as "the largest and most perfectly appointed athletic club building in the world."/2/ The 1906 earthquake and fire destroyed the Olympic Club and most other structures in the area. Shortly after the disaster, additional land adjoining the original property on the east was purchased (including the proposed hotel site) and a temporary wooden structure known as the "Shack" was constructed on Lot 4. The "Shack" had a small gymnasium, handball court, swimming tank, and restaurant. It opened on August 3, 1907. Meanwhile, plans were being formulated for a new building on Lot 5. On May 6, 1911, the cornerstone of the present Olympic Club was laid and 13 months later, on June 15, 1912, the doors opened./2/

A 1922 aerial photograph of Union Square shows the Olympic Club on Lot 5 of the project site and what appears to be the remains of the "Shack" occupying the building site./4.3/ A 1930 drawing of a Moderne, 26-story "New Olympic Club" that was never built shows the conceptual structure occupying the entire property./5/ At some point after 1922, the "Shack" was removed, and a service station was built in its place. The service station was replaced about 1960 by the existing public parking garage that now occupies Lot 4./3/

NOTES - Project Description

/1/ San Francisco City Planning Commission Resolution No. 8474: adopted January 17, 1980.

/2/ Olympic Club, 1960, The Olympic Club of San Francisco: 1860-1960.

/3/ Tom Marquoit, General Manager, Olympic Club, personal communication, March 12, 1982.

/4/ Charles Hall Page & Associates, 1979, Splendid Survivors, prepared for the Foundation for San Francisco's Architectural Heritage.

/5/ Architect and Engineer, February 1930, p. 59.

A. LAND USE AND PLANNING

LAND USE

The project site is 1 block west of Union Square in the Downtown Hotel District. The surrounding neighborhood contains residential hotels and apartments, tourist hotels, private clubs, offices, ground-floor retail and entertainment establishments, and a variety of institutional uses (see Figure 10, p. 21). Figure 11, p. 22, shows the tourist and residential hotels in the project vicinity. The scale of development in this area is mixed; new, large-scale buildings such as tourist hotels are interspersed with older, smaller-scale uses such as private clubs and restaurants.

Lot 4, at the northwest corner of Mason and Post Sts., is occupied by a 3-story, approximately 200-space public parking garage and a car rental agency. Lot 5 is occupied by the 5-story Olympic Club. Adjacent to the site, to the west, is the 5-story Bohemian Club. To the south of the project site, across Post St., are the 11-story Pacific Plaza Hotel, the 6-story Hotel Cecil, and the 4-story Will Rogers Hotel, all tourist hotels with ground-floor retail and restaurant uses. Also along Post St. in this block are the 6-story Press Club and a 2-story building containing a church reading room and a public garage. Diagonally across from the site, at the southwest corner of Mason and Post Sts., is the First Congregational Church. Adjacent to the church, to the east, is the new, 31-story Hotel St. Francis Tower. To the east of the site, across Mason St. are the 15-story Medico-Dental Building, a 4-story residential hotel, a 4-story apartment building and a 3-story private club (see Figure 11, p. 22).

The portion of the project block north of the project site is occupied by the 11-story Marines Memorial building (a private club with ground-floor retail and entertainment uses), the 4-story Academy of Arts, the 6-story Hotel Beresford, a 2-story parking garage, and 3 office buildings with ground-floor commercial space ranging in height from 2 to 5 stories.

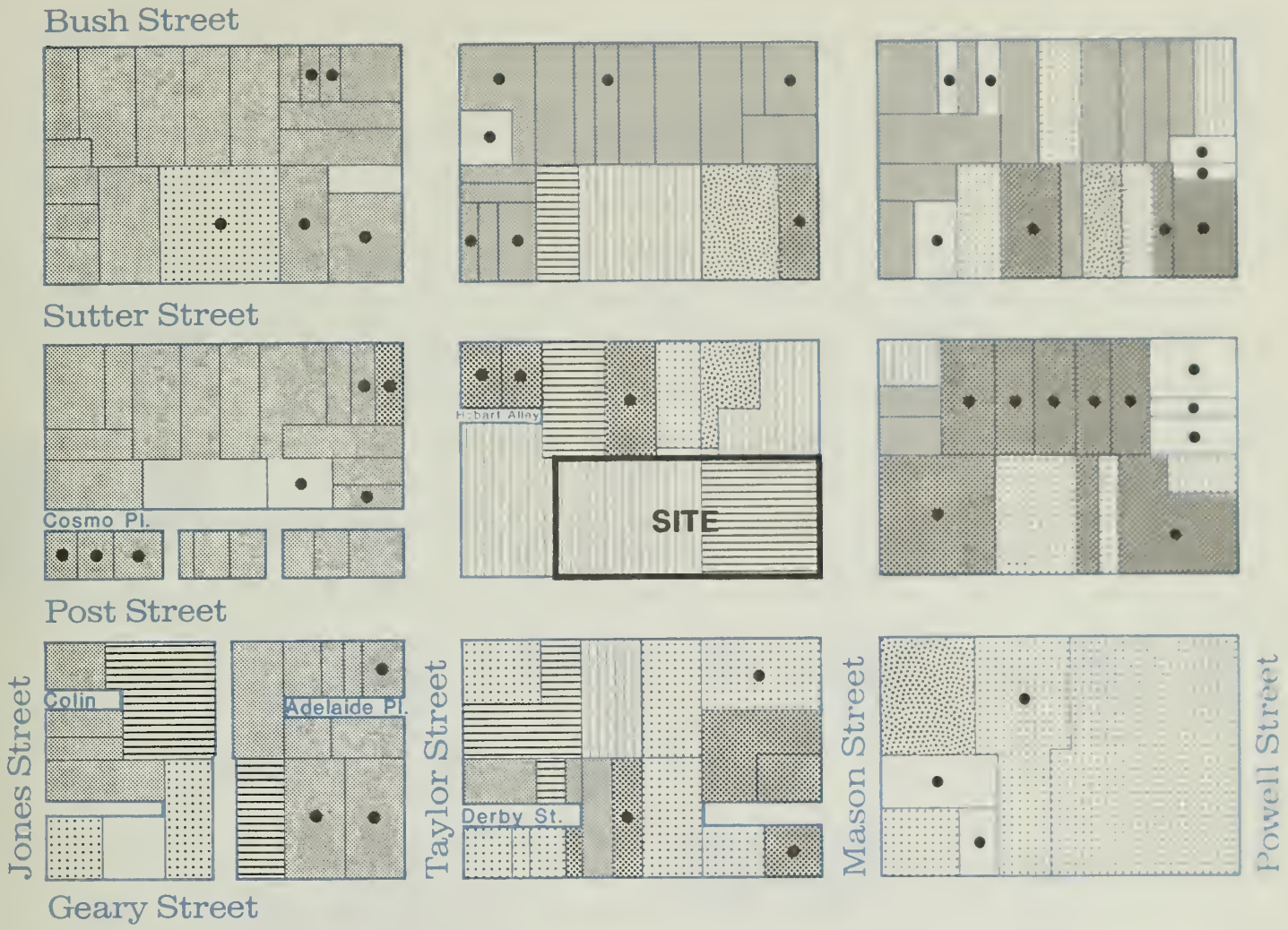


FIGURE 10: Existing Land Use

SOURCE: Environmental Science Associates, Inc.

LEGEND

Residential Hotel

Tourist Hotel

FIGURE 11: Hotels in the Project Vicinity

SOURCE: Environmental Science Associates, Inc.

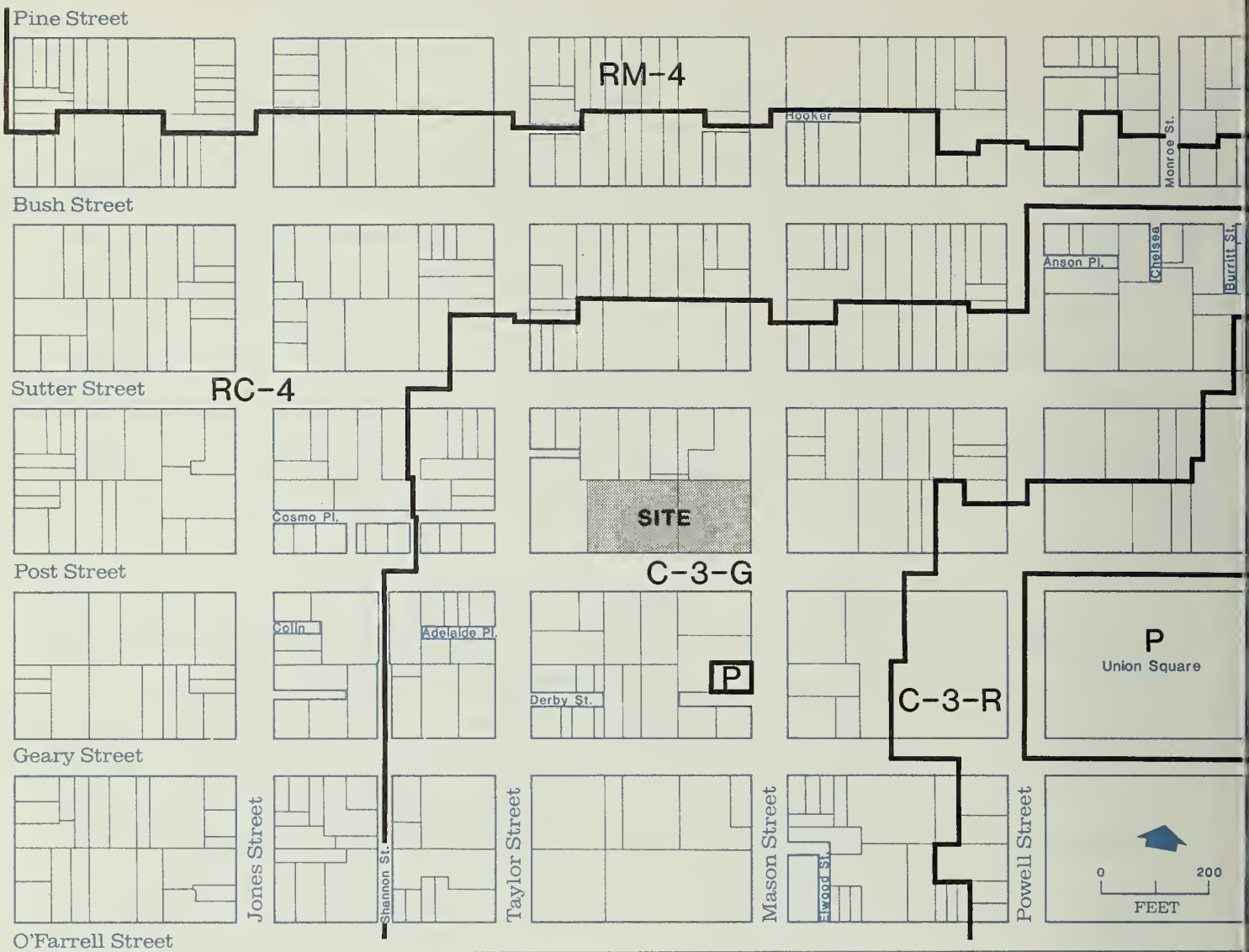
The project site is north of the North of Market Area, which is generally bounded by Post, Van Ness, Market, and Powell Sts. The characteristics of this low-income North of Market Area neighborhood are described in Hotel Ramada San Francisco, Final EIR, EE 80.171, certified January 29, 1981, pp. 30-33. This document is available for public review at the Department of City Planning, Office of Environmental Review, 450 McAllister St., and is hereby incorporated by reference into this EIR. In summary, this document describes the North of Market Area as a low-income, inner-city neighborhood that provides affordable housing and services for the elderly, refugees, ex-offenders, and alcoholics and others of limited resources. The North of Market Area housing stock is among the limited low-income, unsubsidized housing left in San Francisco.

PLANNING

The project block is in a Downtown Commercial (C-3-G) zoning district (see Figure 12, p. 24). Uses permitted in this district include hotels, retail, offices, entertainment, clubs and institutions, and high-density residential development. The City Planning Code limits buildings in this district to a basic Floor Area Ratio (FAR) of 10:1; this means buildings may have a floor area, excluding mechanical and parking space, of up to 10 times the area of the site. Floor area bonuses established by Section 126 of the Planning Code for innovative design or provision of public amenities could add to the FAR and result in an FAR in excess of 10:1. On May 27, 1980, the Board of Supervisors established a moratorium on the use of this section of the City Planning Code. Hotels, however, may be permitted bonus floor area by Conditional Use authorization.

In recognition of the compact and congested nature of the downtown area, no off-street parking is required for individual commercial buildings in a C-3-G district, as stated in Section 161(c) of the City Planning Code. Parking is permitted to occupy up to 7% of the gross floor area of a building as an accessory use with no conditional use authorization. Section 152 of the City Planning Code requires 2 off-street loading docks for hotels with gross floor areas between 200,001 and 500,000 sq. ft.

The site is in the 240-H Height and Bulk District (see Figure 13, p. 25), in which the maximum permitted height is 240 ft. Above a height of 100 ft., the maximum permitted building length is 170 ft. and the maximum permitted diagonal dimension is 200 ft.

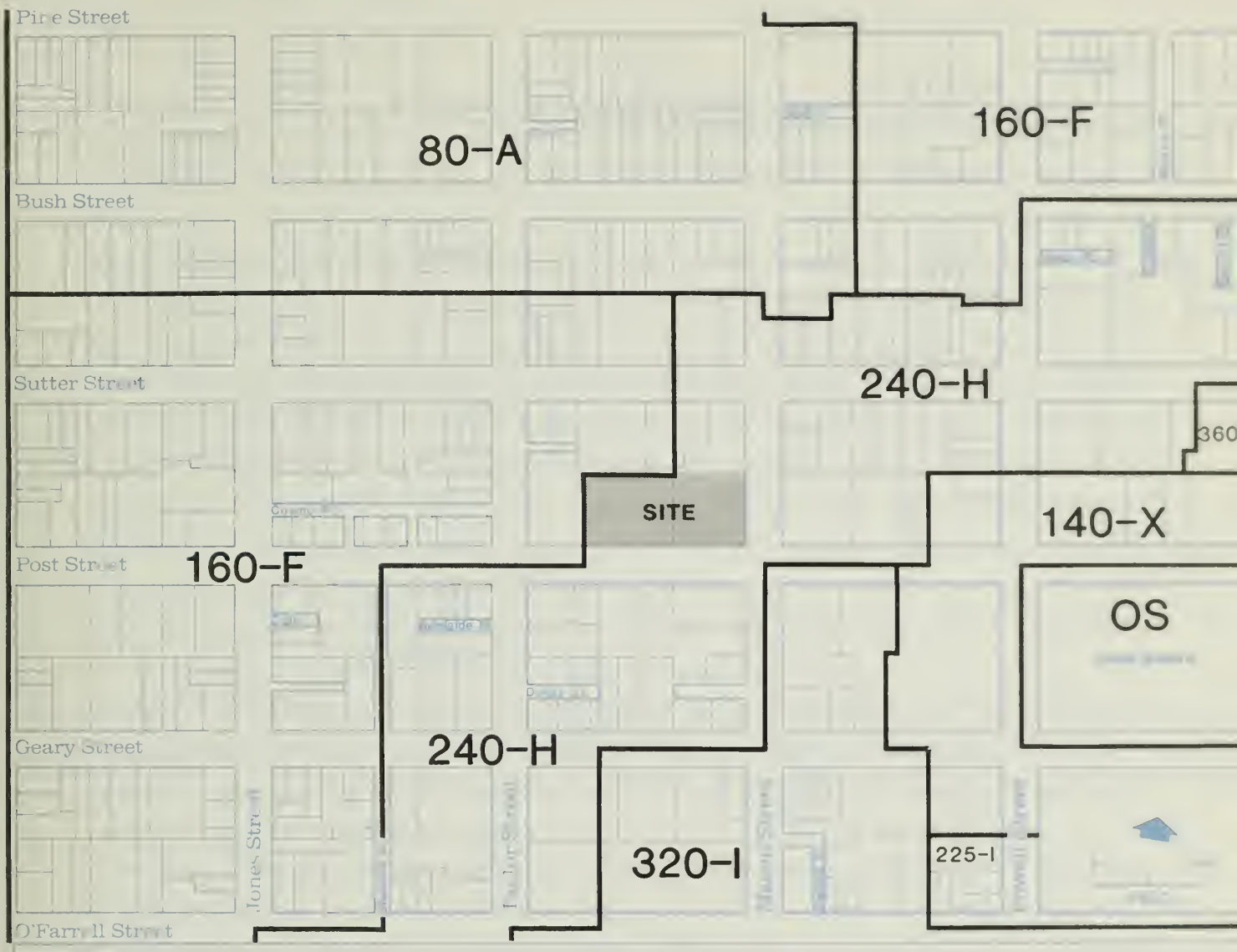


LEGEND

RM-4	residential, mixed districts, high density
RC-4	residential-commercial combined districts, high density
C-3-G	downtown general commercial district
C-3-R	downtown retail district
P	public use districts

FIGURE 12: Planning Code Use Districts

SOURCE: City Planning Code



LEGEND

HEIGHT and BULK DISTRICTS	HEIGHT LIMIT	HEIGHT ABOVE WHICH MAXIMUM DIMENSIONS APPLY	MAXIMUM BUILDING LENGTH	MAXIMUM DIAGONAL DIMENSION
360-I	360'	150'	170'	200'
320-I	320'	150'	170'	200'
240-H	240'	100'	170'	200'
225-I	225'	150'	170'	200'
160-F	160'	80'	110'	140'
140-X	140'	Bulk limits not applicable		
80-A	80'	40'	110'	125'
OS	Conformity with objectives, principles and policies of the Master Plan			

FIGURE 13: Planning Code Height and Bulk Districts

SOURCE: City Planning Code

B. URBAN DESIGN AND ARCHITECTURAL RESOURCES

URBAN DESIGN

The project vicinity contains mid- to high-rise older development. Structures are built out to the lot lines, forming a continuous facade line, and are generally surfaced in brick. Many of the buildings feature terra cotta ornamentation. In massing, buildings are 2- and 3-part vertical blocks. Window patterns are a predominant visual feature, consisting of variations on the rectangle and arch and arranged in balanced compositions that alternate rows of different window shapes. This patterning provides visual interest and reduces the apparent bulkiness of the buildings.

Post St. between Taylor and Powell Sts. is characterized by large-scale hotel and club buildings. Looking east along this street from the site, the view terminates in a wall of high-rise buildings that identify the edge of the Financial District. Looking west along Post St., the view terminates uphill at Leavenworth St., which is defined by small- to moderate-scale older development. The moderate-scale views of older buildings climbing up the south slope of Nob Hill form a northern background to the site.

Development within a 1-block radius of the project site is mostly moderate in scale, with few structures exceeding 100 ft. (see Figure 20, p. 48). The scale of development, however, decreases from south to north and from east to west in the vicinity of the site, and the project site is adjacent to or near several tall buildings. These include the Marines Memorial building, a 210-ft.-high structure adjacent to the project site on the north; the Medico-Dental building, a 193-ft.-high structure facing the east side of the site across Mason St., the Pacific Plaza Hotel, a 134-ft.-high building facing the south side of the site across Post St.; and the 400-ft.-high St. Francis Hotel tower, 250 ft. southeast of the project site. The 103-ft.-high Bohemian Club (see Figure 20, p. 48) adjoins the project site on the west.

The existing structures on the site are generally not visible beyond the buildings and street segments in the immediate vicinity. The absence of a sizable building on the site currently permits full views of the south facades of the Marines Memorial building and the Academy of Art College from both Post and Mason Sts.

No long range views of San Francisco Bay or the City are available from the existing buildings on the site nor from low- and moderate-scale development adjacent to the site.

ARCHITECTURAL RESOURCES

The project site contains 1 building, the Olympic Club at 524 Post St. This building is rated "A" in an architectural and historical resource survey of the downtown area conducted by the Foundation for San Francisco Architectural Heritage (see Appendix C, p. 163)./1/ Buildings rated "A" are deemed by Heritage to be most important; these buildings are "individually the most important buildings in downtown San Francisco, distinguished by outstanding qualities of architecture, historical values, and relationship to the environment." In the opinion of Heritage, "all A-rated buildings are eligible for the National Register, and are of highest priority for City Landmark status."/2/

The Olympic Club was rated "3/4" in a 1976 city-wide inventory of architectural resources conducted by the Department of City Planning (see Appendix C, p. 163). The 5-story structure was built in 1912. It is steel-frame construction with exterior surfacing consisting of a light sandstone base, brown brick midsection, and polychrome terra cotta capital and cornice. The building is 3-part vertical composition with Renaissance/Baroque ornamentation. The entrance porch features Doric columns and statues and was designed in a style similar to that of the Palazzo Massini in Rome.

The project block contains 1 other building rated "A" by Heritage and 2 buildings rated "B" by Heritage. The "A"-rated Bohemian Club, at 625 Taylor St., was built in 1934. It is a 5-story steel-frame structure with brick exterior. This building is 3-part vertical composition with ornamented facades of bronze and terra cotta panels with fluted pilasters at the top.

The Marines Memorial building at 609 Sutter St. is rated "B" by the Heritage Survey. It is a 12-story structure of steel-frame construction, with a brick exterior, built in 1927. The building is 3-part vertical composition with Renaissance/Baroque ornamentation. A projecting, domed bay window is located at the 2nd floor over the entrance.

The Academy of Art College at 625-627 Sutter St., rated "B" by the Heritage Survey and "3/4" by the City Planning Survey, is a 4-story reinforced concrete structure in a 3-part vertical composition. The ornamentation is Renaissance/Baroque; the end bay (the west side) features extensive ornamentation characteristic of 18th century Spanish architecture. Figure 14, p. 29, identifies these and other buildings in the project vicinity that are included on the list, officially adopted by the City Planning Commission of Architecturally and/or Historically Significant Buildings in most of the C-3 District.

NOTES - Urban Design and Architectural Resources

/1/ The Foundation for San Francisco's Architectural Heritage is a private, non-profit organization that works to evaluate and preserve architecturally and historically significant buildings in San Francisco.

/2/ Charles Hall Page and Associates, 1979, Splendid Survivors, p. 12

C. TRANSPORTATION, CIRCULATION, AND PARKING

PUBLIC TRANSIT

The site is 1 block west of Union Square, within 3 blocks of the existing Hilton Hotel, and within 3 blocks of the approved Hotel Ramada and Holiday Inn. Charter bus, limousine, and taxi service is encouraged by the number of hotels and is therefore an established and growing mode of transportation in the project area. The Airporter bus terminal, which provides bus service to the San Francisco International and Oakland airports with service to the large hotels in the vicinity of the terminal, is located 3 blocks south and 1 block west of the project site.

The project site is well situated for access to transit lines (see Figure 15, p. 30). All Muni Metro LRV (Light Rail Vehicle) and BART lines serve the site from the subway station at Powell and Market Sts. Thirty-nine Muni lines stop within 2,000 ft. (walking distance) of the site (see Figure 15, p. 30). Muni bus service to the Southern Pacific Depot via Route 30 is available within 2 blocks. The Transbay Terminal (AC Transit) is 8 blocks southeast of the site and can be reached on the 38 Geary line from stops 1 to 2 blocks south of the site.

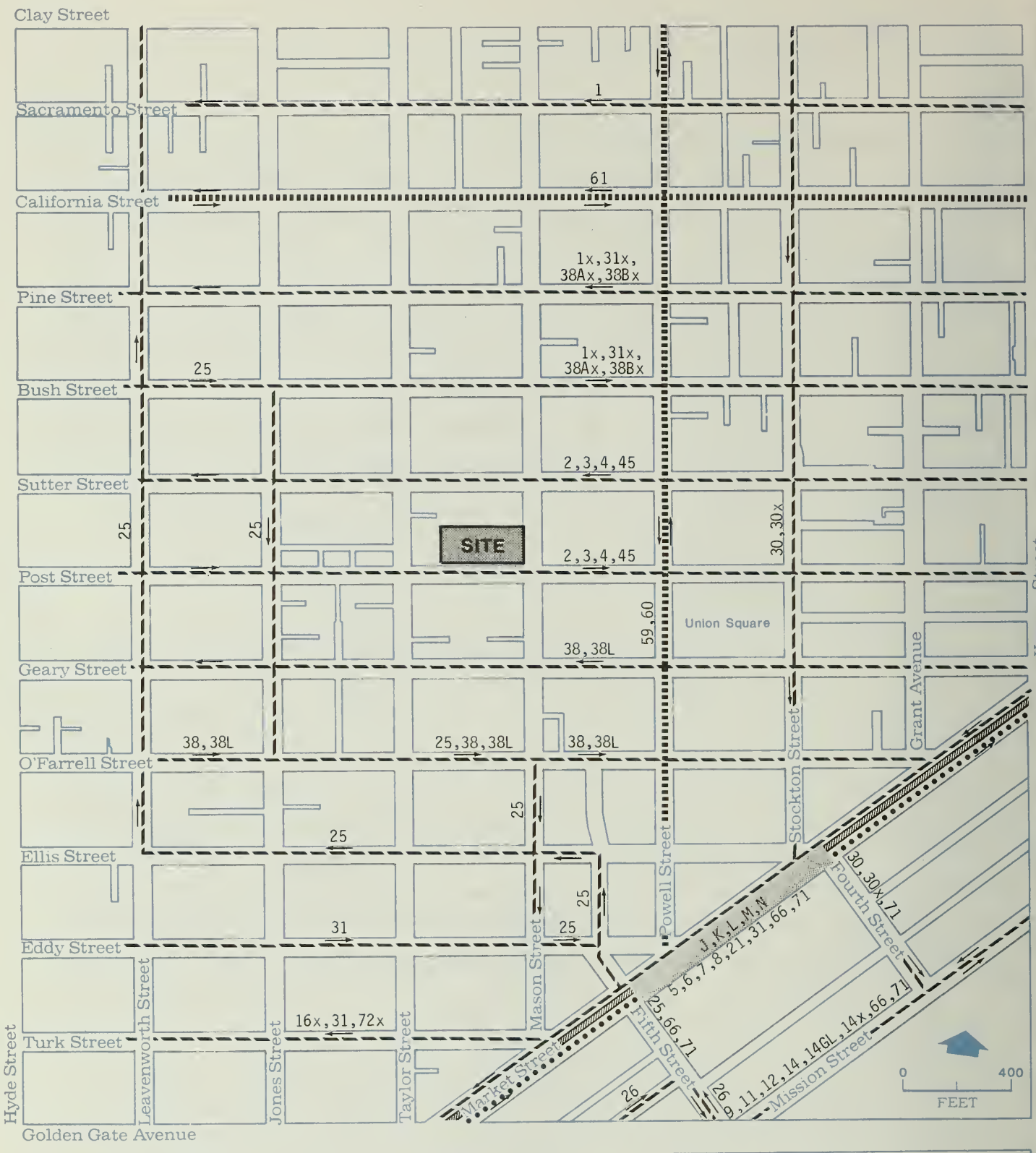
Peninsula service is provided by the CalTrans Peninsula Train (Southern Pacific) from the terminal at Fourth and Townsend Sts., about 1 mile southeast of the site, and by the San

LEGEND

		Heritage	DCP
1.	Olympic Club 524 Post St.	A	3/4
2.	Bohemian Club 625 Taylor St.	A	-
3.	Marines Memorial 609 Sutter St.	B	-
4.	Academy of Art College 625-27 Sutter St.	B	-
5.	S.F. Water Dept. 425 Mason St.	B	-
6.	Press Club of S.F. 555 Post St.	B	-
7.	Sussex Bldg. 450-456 Geary St.	B	-
8.	458-466 Geary St.	B	-
9.	1st Congregational Church 491 Post St.	A	3/4
10.	Native Sons Bldg. 414 Mason St.	A	3/4
11.	St. Francis Hotel (old) 335 Powell St.	A	3/4
12.	Medico-Dental Bldg. 490 Post St.	B	-
13.	Elks Club 450-460 Post St.	A	-
14.	Chamberlain Bldg. 442-444 Post St.	B	3/4
15.	St. Andrew Hotel 438 Post St.	B	-
16.	United Airlines Bldg. 421 Powell St.	B	3/4
17.	Chancellor Hotel 433 Powell St.	B	-
18.	Poetz Bldg. 449-465 Powell St.	B	-
19.	559-565 Sutter St.	B	-
20.	Francisca Club 595 Sutter St.	B	-
21.	602 Mason St.	B	-
22.	Hotel Regent 562-570 Sutter St.	B	-
23.	540 Sutter St.	B	-
24.	Christ Scientist 532-536 Sutter St.	B	-
25.	Physicians Bldg. 500-516 Sutter St.	A	-
26.	Perine House 535 Powell St.	A	-
27.	Family Club 545 Powell St.	A	-
28.	YWCA 620 Sutter St.	B	-
29.	Metropolitan Club 640 Sutter St.	A	2/3

FIGURE 14: Architectural Resources in the Project Vicinity

SOURCE: Environmental Science Associates, Inc.



LEGEND

- BART and Muni Metro Station
- BART Route
- Muni Metro Subway
- Surface Bus Route
- Cable Car Route
- 38,L,M,1x — Route Designation
- → Direction of Transit Vehicle Travel

FIGURE 15: Muni and BART Routes in the Project Area

Source: Environmental Science Associates, Inc., using San Francisco Municipal Railway Interim Map, January, 1982

Mateo County Transit District (SamTrans), which has bus routes and stops along various streets downtown (see Figure 15, p. 30), and transfer connections at the Daly City BART Station.

The Golden Gate Bridge, Highway, and Transportation District (Golden Gate Transit) provides peak-period bus service to Marin and Sonoma Counties from a.m. stops on Battery and First Sts. near Market St.. and from p.m. stops on Pine and Sansome Sts. Golden Gate Transit also provides ferry commute service to terminals in Larkspur and Sausalito from the Ferry Building and Harbor Carriers, Inc., provides service to Tiburon. Golden Gate Transit operates a van-pooling program to North Bay areas.

A car-pooling program, RIDES for Bay Area Commuters, provides leasing and rider-matching services for establishing van and carpools. Independently owned and operated jitneys provide additional transit service on Mission St. during the peak commute hours.

Of the streets bordering the project block, Sutter and Post Sts. are Transit Preferential streets on which the flow of Muni vehicles is to be expedited. Lines 1, 2, 3, 4, 45, and 76 (latter runs Sundays only) operate in exclusive (diamond) lanes on Post St., which is 1-way inbound toward downtown, and on Sutter St., which is 1-way outbound. The diamond lane on Post St. is on the south side of the street, across from the site. Average headway between buses or trolleys is about 1.2 minutes during the a.m. and p.m. peak hours.

PEDESTRIANS

Sidewalks on Post and Mason Sts. at the site experience about 300 pedestrian trips per hour, or an average of 1 every 12 seconds, during the p.m. peak hour. No conflicts occur under these circumstances, and the sidewalks are open. Pedestrian traffic is less during the a.m. peak hour.

VEHICLES AND STREETS

The project block is bordered on the north by Sutter St., on the south by Post St., and on the east and west by Mason and Taylor Sts., respectively. Post St. (inbound) and Sutter St. (outbound) form a 1-way pair. Both streets have a diamond lane (for exclusive use of buses and right turns) and 2 through-lanes. Mason St. (southbound) and Taylor St. (northbound) also have 2 through-lanes and form a 1-way pair.

Average daily traffic volumes on Post and Sutter Sts. are about 13,000 vehicles. Mason St. carries about 6,000 vehicles per day. Traffic congestion during the a.m. peak hours on inbound Post St. is light (Level of Service B; see Table 6, p. 59) at its intersection with Mason St. at the project site, except when occasional backups from the downstream Powell St. intersection occur. Similarly, traffic congestion is light (Level of Service A; see Table 6, p. 59) on outbound Sutter St. at its intersection with Mason St. during the p.m. peak hour.

The garage now on the site is entered and exited via a driveway on Mason St., or by 2 driveways on Post St.

PARKING

The on-site public garage is operated with valets, and can accommodate about 200 automobiles. About 100 parking spaces are reserved for Olympic Club members, and others are used by a car rental agency that has a small office on the corner. The parking garage generally fills up by noon on weekdays; some parking spaces open up between 5 and 8 p.m., but by 8 p.m. the garage usually fills up again. On weekends, the garage usually fills to about 70% of capacity during the day./1/

Metered curbside parking is provided on both sides of Sutter, Post, Taylor, and Mason Sts. around the project block, except along the site frontage on Post and Mason Sts. The site frontage is a red zone broken by a curb cut to the garage from Mason St. and 2 curb cuts on Post St. Tow-away zones are in effect between 4:00 to 6:00 p.m. on both sides of Sutter and Post Sts., and also from 7:00 to 9:00 a.m. on the south side of Post St. in the project block. The p.m. tow-away zones on Post St. are often used illegally as parking spaces.

There are about 4,000 public off-street parking spaces in garages or lots within about 1,000 ft. of the site. Vacancies at mid-afternoon, when the greatest number of vehicles are parked, were about 500 (13%) in 1980 and 1981 when the area was last surveyed.

NOTE - Transportation, Circulation, and Parking

/1/ Dave Connors, Operations Manager, National Car Rental; telephone conversation, March 1, 1983.

D. AIR QUALITY

The Bay Area Air Quality Management District (BAAQMD) operates an air quality monitoring station at 900 23rd St., about 2.5 miles southerly of the site. A 3-year summary of the data collected at this station and the corresponding air quality standards appear in Appendix E, p 178.

San Francisco's air quality, in general, is the least degraded of all the developed portions of the Bay Area. The prevailing westerly and northwesterly winds carry pollutants from the City to the East Bay and South Bay. Annual fluctuations in air quality are due to meteorological conditions, which vary unpredictably, and pollutant emissions, which have been decreasing in the Bay Area and are expected to continue to do so in the near future. Highest annual pollutant concentrations in San Francisco, while fluctuating due to meteorology, have generally improved since 1971. However, annual numbers of excesses of air quality standards, while exhibiting similar fluctuations, have not shown any clear overall trend during the same period. In 1978 a total of 10 excesses of the ozone, carbon monoxide, nitrogen dioxide, and particulate standards occurred, following a year in which only 1 excess (of the particulate standard) occurred.

The entire Bay Area Air Basin has been designated by the California Air Resources Board as a non-attainment area for ozone, carbon monoxide, and particulate (i.e., the standards for these pollutants are now and are expected to continue to be exceeded). A regional Air Quality Plan was adopted in 1979 that established control strategies to attain and maintain the standards./1/

NOTE - Air Quality

/1/ Association of Bay Area Governments, BAAQMD, and Metropolitan Transportation Commission, January 1979, 1979 Bay Area Air Quality Plan, San Francisco Bay Area Environmental Management Plan. The Federal Clean Air Act Amendments of 1977 mandated that the ozone, carbon monoxide, and particulate standards be attained by 1982, although a 5-year extension (to 1987) has been granted for ozone and carbon monoxide, since the region did not meet standards set for these pollutants by 1982.

E. CONSTRUCTION NOISE

The noise environment of the project site is typical of downtown San Francisco, and is primarily determined by vehicular traffic noise levels in the vicinity of the site. The

Environmental Protection Element of the Comprehensive Plan indicates an existing day-night average noise level (Ldn) of 70 dBA on Post St. in the vicinity of the site, and 65 dBA on Mason St. in the vicinity of the site./1,2/

NOTES - Construction Noise

/1/ Decibel (dB) is a logarithmic unit of sound energy intensity. Sound waves, traveling outward from a source, exert a force known as a sound pressure level (commonly called "sound level"), measured in decibels. dBA is decibel, corrected for the variation in frequency respone of the typical human ear at commonly-encountered noise levels.

/2/ Ldn is an averaged sound level measurement, based on human reaction to cumulative noise exposure over a 24-hour period, that takes into account the greater annoyance of nighttime noises. Noise between 10 p.m. and 7 a.m. is weighted 10 dBA higher than daytime noise.

F. SEISMICITY AND HYDROLOGY

SEISMICITY

Several active faults in the San Francisco Bay Area could affect the site (see Figure G-1, Appendix G, p. 183)./1/ An active fault is defined as a fault that has a historic record or has exhibited other geophysical evidence of movement within about the last 10,000 years (Holocene epoch). The San Andreas Fault is located about 10 miles to the southwest; the Hayward Fault is about 15 miles to the east; and the Calaveras Fault is about 30 miles to the east.

Both the San Andreas Fault and the Hayward Fault have produced major and minor earthquakes in the past, and can be expected to do so in the future. Within the next 60 to 70 years (estimates of the recurrence interval vary), at least 1 earthquake of a magnitude up to the 1906 San Francisco Earthquake (about 8.3 on the Richter Scale) can be expected to occur on the San Andreas Fault. Smaller earthquakes, such as the Daly City earthquake of 1957 (about 5.3 on the Richter Scale) can be expected with greater frequency than a major earthquake.

No known active faults exist within the City of San Francisco./1/ Two inactive faults, the City College Fault and the San Bruno Fault, have been mapped in the City (see Figure G-2, Appendix G, p. 184). Neither of these faults is capable of producing as large an earthquake as has occurred on the San Andreas Fault, and neither is expected to move

in a future major earthquake. The project site is located proximate to the eastern boundary of the Fort Point-Potrero Hill-Hunters Point Shear Zone./2,3/ This sheared zone is inactive and has no significance with regard to current earth movements. However, it is important from the standpoint of engineering geology because the rock contains abundant thinly-layered minerals and represents a zone of potentially unstable ground.

The major seismic hazard on the project site would be groundshaking./2/ This hazard is usually the most destructive component of earthquakes and is estimated to be "strong" for a 1906-magnitude earthquake. Such groundshaking could cause general but not universal fall of brick chimneys and cracks in masonry and brick work./1/ Information is unavailable for the site to determine the estimated building damage level for a "1906 type" earthquake, but it immediately borders an area expected to have "severe" damage./2/ Liquefaction and subsidence are not expected to be hazards at the site because artificial fill underlain by dune sand (the assumed existing conditions at the site) represents a fairly stable configuration under earthquake conditions./4,5/

A preliminary soils investigation has been completed for the site./6/ Test borings indicate 7 to 18 ft. of loose to medium dense sand fill intermixed with debris and occasional clay layers. Beneath the fill, medium dense to dense sands extend to depths of 22 to 44 ft. The sand is generally underlain by a clayey layer overlying bedrock. Groundwater was encountered at depths ranging from 31 to 43 ft.; the water level is affected by pumping in the Olympic Club basement. Ground settlement due to densification of loose sand and fill under seismic or vibratory loads is a potential hazard.

HYDROLOGY

No water bodies, springs, or water courses are located on the site. The site is covered by impervious surface and the precipitation falling on the site is converted to runoff and collected by the City of San Francisco combined sanitary and stormwater sewer system. Surface runoff is generally greatest from November to April.

The source of the groundwater in this area is assumed to be surface infiltration at higher elevations on Nob Hill.

NOTES - Seismicity and Hydrology

/1/ URS/John A. Blume and Associates, 1974, San Francisco Seismic Safety Investigation, Geologic Evaluation.

/2/ Schlocker, Julius, 1974, Geology of the San Francisco North Quadrangle, California, U.S. Geological Survey Professional Paper 782.

/3/ A shear zone is an area that has undergone extensive shearing and displacement of rocks through geologic time; in this case the shearing was caused by faults that are inactive.

/4/ Liquefaction is defined as earthquake-induced transformation of saturated granular material, such as sand, into a fluid-like state similar to quicksand.

/5/ Helley, et al., Flatland Deposits - Their Geology and Engineering Properties and Their Importance to Comprehensive Planning, U.S. Geological Survey Professional Paper 943 (1979).

/6/ Harding Lawson Associates, 1982, Preliminary Report, Soil Investigation, Olympic Club Hotel Project.

G. EMPLOYMENT, HOUSING, AND FISCAL ISSUES

EMPLOYMENT

About 30 persons are currently employed at the parking garage and car rental agency located on the building site.

HOUSING

Both regional and San Francisco housing stock are characterized by low growth rates, low vacancy rates, and high purchase and rental costs in relation to typical wages paid. These factors and high mortgage costs have constricted the supply and reduced the affordability of housing in San Francisco.

San Francisco has about 300,000 occupied housing units, according to the 1980 U.S. Census. About 2/3 of the housing stock is rented and about 1/3 is owner-occupied./1/ The number of building permits issued for single- and multiple-housing units in San Francisco decreased 34.4% between 1979 and 1980, from 1,833 to 1,202 units./2/ Housing starts in 1982 totaled about 1,550 units. About 830 of these were low- and moderate-income units and about 720 were market-rate units./3/

The average 1980 market value of a single-family house was $140,000 in the Bay Area and $148,000 in San Francisco./4/ The 1980 Census reports a 1980 median value of $104,600 for single-family units in San Francisco (not including condominiums), and a vacancy rate of 1.0% for owner-occupied dwellings./5/

According to a nonrandom survey of newspaper advertisements by the Department of City Planning in 1980, median advertised rents ranged from $289 for a studio apartment to $588 for a unit with 3 + bedrooms, and averaged $455 for all types of units. Census data for 1980 indicated a median rent in the City of $267 and a vacancy rate of 4.2% for rental units./5/ Census rental data include residential hotels and subsidized housing. A survey conducted by the Federal Home Loan Bank of San Francisco between August and November of 1981 indicated a vacancy rate of 0.7% for multifamily units and 1.3% for single-family houses./6/ A vacancy rate of 4% to 5% indicates a competitive market: the very low rate in San Francisco means that people who are looking for housing are having difficulty finding new residences and there is excess demand that may cause price increases.

Fiscal Issues

The assessed value of the project site in fiscal year 1982-83 is $5,974,192 (property in California is now assessed at 100% of fair market value). At the 1982-83 property tax rate of $1.17 per $100 assessed valuation, the property will yield about $70,000 in property tax revenues, distributed as shown in Table 1, p. 38. A parking tax is paid on the receipts from the 202 public parking spaces currently occupying the site. At a tax rate of 15%, the parking garage generated about $76,950 in parking tax revenues in 1981-82. The total General Fund revenues to the City and County of San Francisco from the parking tax and non-bond property tax will total about $136,550 in 1982-83. The San Francisco Board of Supervisors has approved an ordinance (224-81) to assess a 1-time fee of up to $5.00 per gross sq. ft. of new office development to support Muni. The ordinance, currently in litigation, would make funds available for operating costs and capital improvements for Muni transit services.

TABLE 1: DISTRIBUTION OF PROPERTY TAX REVENUES FROM PROJECT SITE IN 1982-83

Agency	Ad Valorem Tax Rate	Percent	Revenues/a,b/
City and County of San Francisco General Fund	$0.998	85.3	$59,600
Schools	0.101	8.6	6,000
Bay Area Air Quality Management District	0.002	0.2	100
BART	0.069	5.9	4,100
TOTAL	$1.170	100.0	$69,900

/a/ Numbers may not add up due to rounding.
/b/ Based on the 1982-83 composite tax of $1.17 per $100 of assessed valuation.

SOURCE: San Francisco Controller's Office; Environmental Science Associates

NOTES -- Employment, Housing, and Fiscal Issues

/1/ Association of Bay Area Governments (ABAG), "Census Data Bulletin No. 6," March 1982.

/2/ ABAG, Housing Activity Report, Number 3, May 1981.

/3/ San Francisco Progress Real Estate Guide, "82 Homes Built for Moderate Income Buyers," based on information obtained from the Mayor's Office of Housing and Community Development, November 5, 1982.

/4/ Security Pacific Bank, "Monthly Summary of Business Conditions - Northern Coastal," March 31, 1981, p. 2.

/5/ City Planning and Information Services, "1980 Census Information," March 1982.

/6/ Federal Home Loan Bank of San Francisco, "San Francisco County Housing Vacancy Survey," May 1982.

An Initial Study of the proposed project was published on March 12, 1982, and a determination was made that an EIR was required. Issues that were considered to require no further discussion as a result of the Initial Study include: glare, operational noise, utilities and community services, biology, geology and soils (except for hazard from falling objects), water, hazards, and archaeological resources. Therefore, this EIR does not discuss the above issues. The Initial Study is incorporated herein as Appendix A, p. 115, and may be referred to for a discussion of these issues.

The Initial Study determined that other effects might be significant. These effects are discussed below. The purpose of this section is to provide more detailed information, so that a decision can be made on which potential effects are significant and which are not. After a review of the draft EIR, a public hearing, and a review of the responses to comments, the final determination of significance will be included in the Certification Resolution. Not all of the impacts discussed in this section are physical environmental effects as defined by the California Environmental Quality Act (CEQA). They are included herein for information only.

A. LAND USE AND PLANNING

LAND USE

The proposed project would change the land use on the building site from a public parking garage and car rental agency to a tourist hotel. The Olympic Club would remain. The proposed hotel would be similar to uses in the surrounding Union Square Hotel District (see Figure 10, p. 21, and Figure 11, p. 22). Six other major hotels have been proposed for the area: the Holiday Inn and the Hilton Tower No. 2, both about 3 blocks south of the site; the Hotel Ramada, under construction about 4 blocks south of the site; the Marriott Hotel and the Meridien Hotel (latter under construction), both about 5 blocks southeast of the site; and the Stockton/O'Farrell hotel project, about 2 blocks southeast of the site.

The probable impacts of cumulative hotel development on land use and community characteristics in the North of Market Area are described in Hotel Ramada, San Francisco, Final EIR, EE 80.171, certified January 29, 1981, pp. 67-70 and incorporated by reference into this EIR (see p. 22). In summary, Hotel Ramada concludes that while some businesses in the eastern North of Market Area might become more tourist-oriented, the overall variety of uses in the North of Market Area would remain much the same. Cumulative hotel development in the North of Market Area could contribute to economic pressures that are already increasing land values in the eastern North of Market Area. This, in turn, could influence rents and the conversion of residential hotel units to tourist units.

The majority of commercial uses within a 1-block radius of the project site are tourist or City-oriented. These could probably absorb the increase in service demand created by the project. Therefore, further conversions of predominantly neighborhood-serving uses to predominantly tourist-serving uses in the immediate project vicinity would be an unlikely result of the project.

PLANNING

The project block is zoned C-3-G (Downtown General Commercial), where hotels are permitted uses. The basic Floor Area Ratio (FAR) in this district is 10:1; Section 126 of the Code provides for floor area bonuses beyond the 10:1 FAR, where developments incorporate specific public amenities. On May 27, 1980, the Board of Supervisors approved Interim Controls establishing a moratorium on the use of this bonus provision for uses other than hotels and residences. Hotels and residences may obtain bonus floor area by Conditional Use authorization.

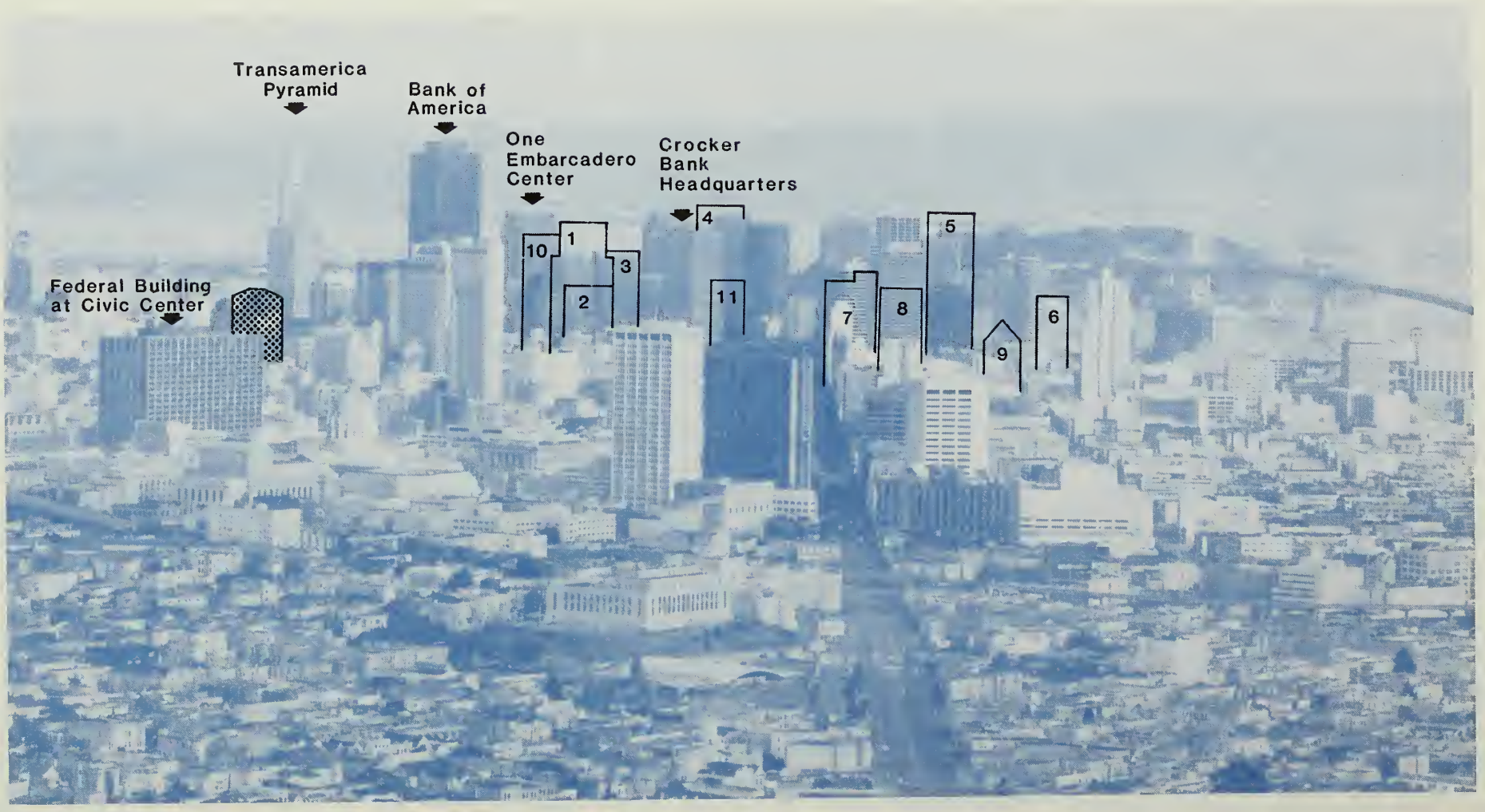
Lots 4 and 5 of Assessor's Block 297, which comprise the project site, are under the same ownership and contiguous. The project FAR, therefore, is based on the combined area of both lots. The proposed hotel's basic floor area would be about 315,000 sq. ft. which, in combination with the Olympic Club's existing 136,100 sq. ft., yields a FAR of about 10.7:1. The project sponsor intends to request bonuses totaling about 36,000 sq. ft. by providing parking access, multiple building entrances, sidewalk widening, and a rooftop observation deck (see City Planning Code, Section 126(b)). These bonuses, if granted by the Conditional Use authorization, would increase the allowable FAR to 10.8:1.

The project site is in the 240-H Height and Bulk District, in which building height is limited to 240 ft. The length and diagonal dimensions of the project, 137 and 194 ft. respectively, would be within the limits set by the Planning Code (Section 270, Table 7). Measured from the curb elevation on Mason St. at the property centerline to the top of the pitched roof, the physical height of the project would be about 260 ft. However, the Code defines roof height, for pitched roofs such as the project's hip roof, as the average height of rise (Section 260.2). Defined in this manner and excluding the mechanical penthouse from the height of the structure (up to 16 ft. of mechanical penthouse is exempted from height calculations under Section 260b (1.B) of the Planning Code), the height of the building as calculated for Code compliance falls within the 240-ft. limit.

No off-street parking is required for individual commercial buildings in a C-3-G district; accessory parking is permitted to occupy up to 7% of the gross floor area of such buildings. The project would include parking for the hotel, for retail uses included in the project, and for reserved use by Olympic Club members; 140 parking spaces would be located in 5 subsurface parking levels. The project would require a Conditional Use authorization to use bonus floor area and to use about 42,500 sq. ft. more than the 7% of the floor area permitted as an accessory use for parking. The project would require discretionary review by the City Planning Commission under Resolution 8474, which requires review of all projects in the Downtown area.

B. URBAN DESIGN AND ARCHITECTURAL RESOURCES

The proposed hotel would be the tallest structure on the project block. It would be about 140 ft. taller than the adjoining Olympic Club and about 20 ft. taller than the adjoining Marines Memorial building. It would become part of the skyline of downtown San Francisco in views from Twin Peaks, Nob Hill, and Potrero Hill (see Figure 16, p. 42). Taller buildings in the Financial District would obscure views of the project from San Francisco Bay. The proposed hotel would alter street-level views at the Post-Mason St. intersection (see Figure 17, p. 43). From some points of view, however, the new building would not appear much taller than existing buildings near the site. The structure's apparent scale from street level would be reduced by glass and metal canopies that would be installed to shelter pedestrians on the sidewalks.



PROJECT

STRUCTURES PROPOSED OR UNDER CONSTRUCTION

1	333 Bush St.	5	5 Fremont Center	9	90 New Montgomery
2	222 Kearny St.	6	135 Main St.	10	Russ Tower
3	101 Montgomery St.	7	New Montgomery Place	11	San Francisco Federal
4	One Sansome	8	71 Stevenson		

SOURCE: Environmental Science Associates, Inc.

FIGURE 16: View of the Project from Twin Peaks

FIGURE 17: View of the Project Looking Northwest from the Southeast Corner of the Post/Mason St. Intersection

SOURCE: Portman Properties, Inc.

Viewed from the south along Mason St. (see Figure 18, p. 45), the proposed hotel would appear slightly larger than the Pacific Plaza Hotel and the Marines Memorial building, and about equal in height to the Medico-Dental building. The project's "massing" or profile would be similar to that of each of these buildings. The project, built out to the property line, would create a continuous facade along the west side of Mason St., characteristic of older development in the project vicinity (see Setting discussion in Chapter III.B, p. 26).

Viewed from the west along Post St., the proposed hotel's apparent height would be much greater due to the moderate-scale buildings in the foreground, the Olympic Club and Bohemian Club (see Figure 19, p. 46). The lack of setbacks would accentuate its height from this viewpoint. The new structure's profile would be similar to the profiles of the existing buildings in the photograph, and it would complete the dramatic continuous facade along Post St. that begins with the Bohemian Club and extends to Union Square.

The proposed hotel would be composed of a flat building plane at the property line with relief added by prominent window cut-outs and embellishments, strong horizontal accents, and double-story round columns at street level. The project's facade would continue some of the horizontal lines of the adjacent Olympic Club, would echo the keystone arches of some of its windows, and would be finished with brick, stone, and concrete similar in color and texture to that of the Olympic Club. Additionally, the new structure's roof form would recall the Olympic Club natatorium (swimming pool) skylight roof.

The project would neither obstruct nor degrade any scenic view open to the general public. Existing buildings in the project vicinity obstruct distant views from sidewalks and streets in the project vicinity. The closest public open space affording scenic views is Union Square, 1 block southeast of the site. The project would not block any scenic views available at Union Square.

The project would be taller than adjacent buildings, reducing and obstructing views from adjacent and nearby buildings. Views available from these locations are primarily of the urban streetscape in the vicinity of the site. Views of San Francisco, however, are available from some vantage points in the upper floors of nearby buildings. Some of these views would be blocked by the project.

FIGURE 18: View of the Project Looking North from Mason and Geary Streets

SOURCE: Portman Properties, Inc.

Bohemian Club
625 Taylor St.
105'

Olympic Club
550 Post St.
90'

PROJECT
260'

Medico-Dental
Bldg.
490 Post St.
190'

SOURCE: Portman Properties, Inc.

FIGURE 19: View of Project Looking East from Post and Taylor Streets

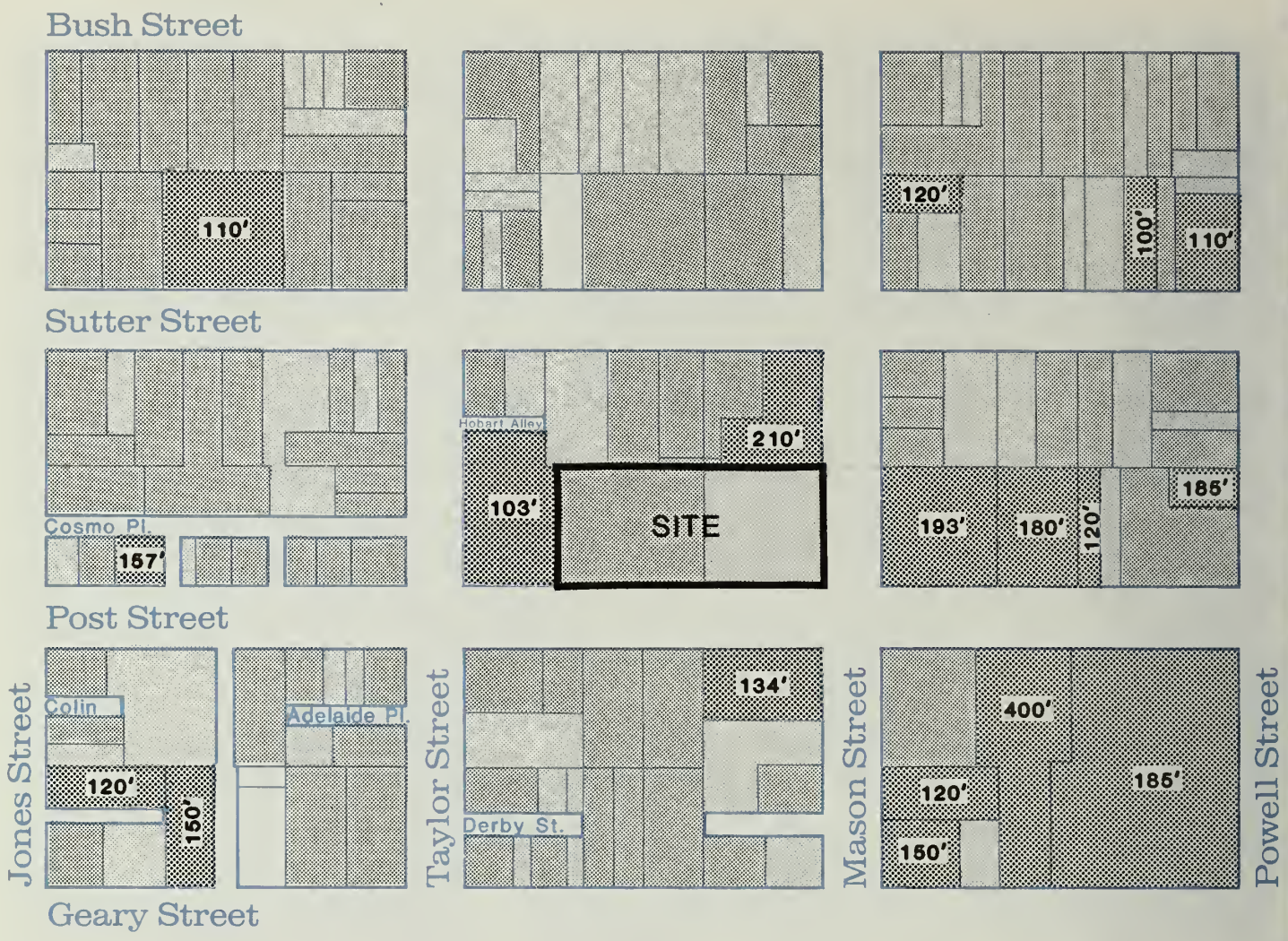
Shadow Patterns

As discussed in Chapter III.B, p. 26, development south and west of the project includes several tall buildings that cast shade over the smaller scale development to the west and north whenever the sun is low in the sky (i.e., morning and evening hours; see Figure 20, p. 48). On an annual basis, the sun's arc through the sky climbs highest during the summer months, is lower in spring and fall, and lowest in winter. Shadows cast by the project would largely coincide with shadows from the 400-ft. St. Francis Hotel Tower, the 210-ft. Marines Memorial building, the 193-ft. Medico-Dental building, the 134-ft. Pacific Plaza Hotel, and other existing buildings in the project area. The project would create new shadow during all seasons and during most hours of the day on the south face of the Marines Memorial building. The greatest shadow effect on buildings adjacent to the site, including the Marines Memorial building, would be during midday when the sun is high in the sky.

The proposed hotel would increase shading of some buildings within a block of the building site. The project would create new shade on the southern facade and portions of the roof of the Marines Memorial building most hours of the day during all seasons; the narrow alley between the 2 buildings would be continuously in shadow. The project would create new shade on the roof and eastern facade of the Olympic Club during morning hours, and would increase shade on the roofs of small buildings on the northern side of the project block from mid-morning until about noon. From mid-fall until mid-spring, the new building's shadow would fall across Mason St., shading small portions of the facades of buildings facing the site.

The proposed hotel's effect on street level shadow would also be limited primarily to within a block of the building site. During morning hours, the proposed hotel's shadow would fall across the project block and, in spring and fall, some new shadow would be cast on Taylor St. During midday hours, the proposed hotel would create new shadow immediately adjacent to the project (see Figure 21, pp. 49-51).

In afternoon hours, the project's shadow would fall across Mason St. A portion of the area that the project would shade on Mason St. east of the site is presently shaded by the existing parking garage. Some new shadow would result from the project, the extent depending on the season. On summer afternoons, the project would shade about 140 ft. of sidewalk on the east side of Mason St. north of Post St. At no time would the project shade Union Square or any other existing park or plaza.



LEGEND

- Vacant
- 15' – 45'
- 46' – 99'
- 100'+

0 200
FEET

FIGURE 20: Building Heights in the Project Vicinity

SOURCE: Environmental Science Associates, Inc.

LEGEND

New Project Shadow

Existing Shadow

0 300 FEET

Note: Shadows presented only within shadow path of project.

FIGURE 21A: Shadow Patterns in Project Vicinity, 12 noon, P.S.T., March 22nd/Sept. 24

SOURCE: Environmental Science Associates, Inc.

LEGEND

New Project Shadow

Existing Shadow

0 200

FEET

Note: Shadows presented only within shadow path of project.

FIGURE 21B: Shadow Patterns in Project Vicinity, 12 noon, P.S.T., June 22nd

SOURCE: Environmental Science Associates, Inc.

LEGEND

New Project Shadow

Existing Shadow

0 200
FEET

Note: Shadows presented only within shadow path of project.

FIGURE 21C: Shadow Patterns in Project Vicinity, 12 noon, P.S.T., December 22nd

SOURCE: Environmental Science Associates, Inc

Wind Patterns

The project's effects on surface winds were analyzed in a wind tunnel using a scale model to simulate natural wind flow patterns in the project area (see Appendix B, p. 148). Wind speed, wind direction at pedestrian level, and turbulence intensities were measured at 20 representative surface locations within a 2-block radius of the project site. Wind speeds at pedestrian level are expressed in this discussion as a fraction of the "freestream" wind speed, the unimpeded wind speed above the highest building in San Francisco. This fraction, or wind speed ratio, remains relatively constant for all wind speeds. A location with a high wind speed ratio would experience light winds on a day with light winds. A location with a low wind speed ratio could experience strong winds on a windy day, but these winds would not be nearly as strong as freestream winds. Wind speed ratios are defined qualitatively (i.e., low, moderate, high) in Appendix B, p. 150. Street level wind speeds resulting from selected combinations of wind speed ratios and freestream wind speeds are shown in Table 2, below.

TABLE 2: RELATIONSHIP OF STREET-LEVEL WIND SPEEDS TO FREESTREAM WIND SPEEDS

Freestream Wind		Wind speed ratio									
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Speed (mph)	Percent of time exceeded/a/	Street-level wind speed (mph)									
5	91	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
10	72	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
15	52	1.5	3.0	4.5	6.0	7.5	9.0	10.5	12.0	13.5	15.0
20	43	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0
25	26	2.5	5.0	7.5	10.0	12.5	15.0	17.5	20.0	22.5	25.0
30	12	3.0	6.0	9.0	12.0	15.0	18.0	21.0	24.0	27.0	30.0
40	3	4.0	8.0	12.0	16.0	20.0	24.0	28.0	32.0	36.0	40.0
50	1	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0

/a/ Approximate percentage of hours during the year when average hourly freestream wind speed exceeds the indicated wind speed.

▬▬ denotes wind speeds above which pedestrians begin to feel discomfort.

SOURCE: Environmental Science Associates, Inc.

Project effects were studied for 3 typical wind directions: northwest, west, and southwest. On an annual basis, winds in San Francisco come from 1 of these 3 wind directions about 76% of the time.

The proposed project would affect the wind environment in the project vicinity for all wind conditions studied (see Appendix B, pp. 148 to 162). For northwest winds, the changes induced by the project would be minor. During northwest winds, street-level winds move easterly along Post St. east of Mason St., and move southerly along Mason St. east of the project site. The project would increase the strength of these street-level wind currents slightly during northwest winds. The project's effects would be more noticeable for west and southwest winds than for northwest winds.

For west winds (see Appendix B, Figures B-2 - B-7, pp. 153 to 156), wind speed ratios on Post St. south of the project site would increase from about 0.1 to about 0.2-0.3. Wind speed ratios at the Post/Mason St. intersection would remain at about 0.2. A vortex now being formed by the Marines Memorial building, north of the site on Mason St., would be eliminated. The wind speed ratio on Mason St. just northeast of the building site would be reduced from about 0.2 to about 0.1. The wind speed ratio would increase from 0.2 to 0.3 at the Sutter/Mason St. intersection.

For southwest winds (see Appendix B, Figures B-13 - B-17, pp. 160 to 162), the wind speed ratio would be reduced from about 0.3 to about 0.2 at the Sutter/Mason St. intersection and on Mason St. just northeast of the project site. The wind speed ratio at the Post/Mason St. intersection would increase from about 0.1 to about 0.2-0.4. Wind speed ratios around Union Square would change from 0.1-0.2 to 0.1-0.3. Winds west of the proposed project on Post St. would change in direction from westerly to easterly.

C. TRANSPORTATION, CIRCULATION, AND PARKING

CONSTRUCTION TRAFFIC AND PARKING

The total construction period is expected to last for about 24 months. Sidewalk and parking lane closures on Post and Mason Sts. would be expected to last for about 16 months.

Access to the project site for excavation-spoil haul vehicles would probably be on Mason St. The probable haul route would be Interstate 280 to Sixth St. to Taylor St. to Bush St. to Mason St. Trucks exiting the site would be expected to use Mason St., Eddy St., Fifth St., Harrison St. and Sixth St. to reach the Interstate 280 ramps. The probable disposal site would be in San Mateo County. Spoil haul operations would be expected to last from 4 to 6 weeks and could generate about 10 truck trips per hour throughout the work day.

Post-excavation construction, depending upon the type of foundation to be used, could require considerable truck traffic for delivery of construction materials. Construction of a mat foundation at the nearby Hotel Ramada required approximately 1,100 truck trips during a 1-day period (S.F. Chronicle, September 27, 1982). However, since the proposed hotel would be smaller than the Hotel Ramada, (refer to Table D-3, Appendix D, p. 171) the number of construction delivery trips for the project would not be expected to be as high.

If truck access (whether for spoils or construction-material hauling) to the site were to be from Post St., trucks entering or exiting the site could cause vehicles to maneuver around them, possibly into the transit lane on the south side of Post St. (the opposite side of the street from the project site). Post St. adjacent to the project site is 1-way eastbound and has, in addition to the transit lane, 1 travel lane and 2 parking lanes (the parking lane on the north side of Post St., however, is used as a travel lane from 7-9 a.m. and from 4-6 p.m. on weekdays). The truck traffic would lessen the abilities of the haul route streets and the Sixth St. on-ramp to carry traffic, because of truck operational characteristics such as slower speed, slower acceleration and larger turning radii.

There would be temporary parking demand by construction workers' vehicles, and impacts on local intersections from construction workers' traffic; these impacts would occur in proportion to the number of construction workers who would arrive by automobile. Concurrent construction activities at the project site and nearby sites (the proposed Mixed Use Development on Assessor's Block 331, the approved Hilton Hotel Tower No. 2 and Holiday Inn, and the Hotel Ramada, currently under construction) would add truck traffic to Taylor and Mason Sts. south of the project site. Because of possibly staggered construction schedules, however, the aggregate effect of this construction would be less than if all the buildings were on the same schedule.

PROJECTED TRAVEL DEMAND

The estimated p.m. peak-hour and daily travel to and from the proposed hotel is shown in Tables 3 and 4, pp. 55 and 56. Peak-hour vehicular travel would occur between 4:00 and 6:00 p.m. and would be about 7% of the average daily traffic. Overall, about 55% of the person-trips generated by the project would be outbound, and 45% would be inbound. The peak hour for pedestrian trips would be at midday, when the project would produce about 500 new pedestrian trips. These estimates are based on 100% occupancy of the proposed hotel.

TABLE 3: PROJECTED P.M. PEAK-HOUR HOTEL TRAVEL/a/

Mode	Person trip ends Distribution (%)	Person trip ends Trip Ends	Auto trip ends
Employees			
Auto	30	53	20
Muni	40	70	
BART	15	26	
AC Transit	5	9	
Sam Trans	2	3	
Peninsula Train	2	3	
Other/b/	6	11	
Subtotal	100	175	20
Guest and visitors (352 occ. rms.)			
Rental Auto	16	36	25
Taxi	11	25	20
Other Auto	9	20	15
Airporter bus	18	40	
Charter or tour bus	22	50	
Other/b/	24	54	
Subtotal	100	225	60
TOTAL		400 /c/	80

/a/ Based on a 1980 survey of the Hilton Hotel on O'Farrell St., between Taylor and Mason Sts., by John J. Forristal, Consulting Traffic Engineer, and the consultant, Environmental Science Associates, Inc. See Tower No. 2 San Francisco Hilton Hotel FEIR, certified January 29, 1981. Peak period for vehicle travel to and from the existing hotel is from 5:00 to 6:00 p.m. Peak period for traffic on local streets is from 4:00 to 6:00 p.m.

/b/ For employees, 'other' includes walking, jitneys, and Golden Gate Transit. For guests, 'other' includes walking and public transit, especially BART and cablecars.

/c/ About 200 person trips would begin or end at the site as pedestrian trips (eg., trips on Muni would begin by walking to a stop); the others would be made directly to the site in vehicles, such as taxis, charter or tour buses, or automobiles.

TABLE 4: PROJECTED DAILY (24 hr.) VEHICULAR HOTEL TRAVEL (at the site only)/a/

Vehicle	Vehicle Trip Ends/b/ Distribution (%)	Trip Ends
Auto	58	500 /c/
Taxi	35	300
Charter or tour bus	4	30
Service vehicle	3	20
Total	100	850

/a/ Based on a 1980 survey by John J. Forristal, consulting Traffic Engineer, contained in the Tower No. 2 San Francisco Hilton Hotel FEIR, certified January 29, 1981.
/b/ One round trip would produce 2 trip ends, 1 in arriving and 1 in departing.
/c/ Includes some drop-offs, as well as trips to the garage.

PUBLIC TRANSIT

The project would generate about 400 p.m. commute trips on public transit, of which about 175 would be by employees and about 225 would be by hotel guests. The project would be expected to produce about 70 p.m. commute trips on Muni by employees, of which 30 would be outbound trips. Hotel guests would make greater use of cable cars than would employees. Of the 54 peak-hour guest trips attributed to 'other' modes of transport in Table 3, an unknown number, perhaps 15 or 20, would be made on cable cars./1/

Outbound p.m. peak-hour transit ridership generated by the project would be only about 0.5% of the total expected increase in transit ridership (see Table 5, p. 57). The cumulative effects of 17.3 million gross sq. ft. of net new office space downtown, and other growth of retail space and hotels under construction, proposed, or approved for construction, however, would increase transit ridership by about 50% (see Appendix D, pp. 165 to 177). Additional riders from other cumulative development would cause demand on BART transbay, Southern Pacific, SamTrans, and most of the affected Muni lines to exceed existing capacity. The effects of cumulative development on public transit in downtown San Francisco are described in detail in Appendix D, p. 165.

TABLE 5:AFTERNOON PEAK HOUR TRANSIT RIDERSHIP

Agency	RIDERSHIP			LOAD FACTOR (Existing Capacity)/a/			LOAD FACTOR (Proposed Capacity)/b/	
	Existing	Existing + Cumulative (without Project)/c/	Existing + Cumulative (with Project	Existing	Existing + Cumulative	Existing + Cumulative + Project	Existing Cumulative	Existing + Cumulative + Project
Muni/d/	23,240	36,120	36,160	0.91	1.41	1.41	1.20	1.20
BART								
Transbay	13,600	19,310	19,320	0.90	1.28	1.28	0.78	0.78
Westbay	6,445	9,420	9,425	0.61	0.89	0.89	0.57	0.57
A-C Transit	9,560	13,550	13,555	0.72	1.02	1.02	1.01	1.01
SamTrans	1,700	2,290	2,290	0.78	1.05	1.05	0.37	0.37
SPRR	5,180	7,380	7,380	0.78	1.11	1.11	1.12	1.12
Golden Gate								
Motor Coach	4,510	6,430	6,430	0.66	0.94	0.94	0.75	0.75
Ferry	800	1,200	1,200	0.39	0.58	0.58	0.34	0.34

/a/ Load factor based upon existing (recommended) maximum capacity A load factor of 1.00 is equivalent to 100% of recommended seated and standing capacity being used. Recommended maximum capacity is less than "crush" loading that occur occasionally.
/b/ Load factor based upon proposed capacity as specified by each agency's 5-Year Plan (see Appendix D, p. 165).
/c/ Cumulative development is that listed in Tables D-2 and D-3, Appendix D, pp. 169 and 171, respectively.
/d/ 1982 Muni ridership is approximate based on a compilation of Muni ridership by the Department of City Planning as supplemented by ESA.

NOTE: Table gives average system-wide conditions over the entire peak hour. Short term peaks, or "peak-of-the-peak" load factors would be higher.

SOURCE: Environmental Science Associates, Inc.

HOTEL-RELATED TRANSIT

Based on data compiled for the Hilton convention hotel, taxi, airports, and charter/tour buses would serve about 25, 40, and 50 new p.m. peak hour patrons, respectively, from the proposed hotel. This new patronage would require about 10 taxis per hour (20 trips ends per hour) and about 1 each of Airporter buses and charter or tour buses. These taxis, as well as 'other autos' shown in Table 5, p. 57, could be accommodated within a period of an hour in the 'drop-off,' 'taxi-waiting,' and 'departing guests loading area' shown on Figure 4, p. 12. Any charter or tour bus loading not accommodated on the project site could be done on Mason St. between the driveway curb cut and the intersection with Post St. Because the proposed hotel is designed to serve a different segment of the hotel market, the project may generate a higher proportion of taxis and fewer charter and tour buses than the Hilton Hotel.

PEDESTRIANS

The proposed hotel would generate about 275 p.m. peak-hour pedestrian trips to or from the building site. Pedestrian traffic on the Post and Mason St. sidewalks would increase by about 50%. Sidewalk pedestrian flows, however, would remain open, or unimpeded, with minor or no conflicts.

Pedestrians would enter or leave the proposed hotel through entrances on Post and Mason Sts., and hotel employees would use an entrance on Mason St. There would be 2 driveway curb cuts, 1 on Post St. and 1 on Mason St. Vehicle traffic through each curb cut would be about 1 vehicle every minute; pedestrian traffic across the driveway would be about 1 every 10 seconds. Delays from either pedestrian or vehicles would therefore be slight.

VEHICLES (TRAFFIC)

The proposed hotel would generate about 80 p.m. peak-hour vehicle trip ends. Vehicle trip ends generated during the a.m. peak hour would be nearly as numerous. Of this number, fewer than 50 trips would represent new travel to the site. The existing garage on-site can accommodate about 200 vehicles. The new garage for the proposed hotel would have about 140 marked stalls, so that new vehicular trip ends would primarily come from drop off and taxi trips. Table 6, p. 59, shows the minor effect of net new project trips on the intersections of Mason St. with Post and Sutter Sts.

TABLE 6: OPERATING CONDITIONS AT INTERSECTIONS

	Post/Mason St. (A.M.)		Sutter/Mason St (P.M.)	
	LOS/a/	V/C/b/	LOS	V/C
Existing	B	0.60	A	0.56
With cumulative development/c/, but without Post/Mason Hotel	B	0.63	A	0.59
With cumulative development, and with Post/Mason Hotel	B	0.65	B	0.60

/a/LOS stands for Level of Service, defined in Table D-6 of Appendix D, p. 175.
/b/ V/C stands for the volume-to-capacity ratio, related to Level of Service in Table D-6 of Appendix D, p. 175.
/c/ Cumulative development is that listed in Tables D-2 and D-3, Appendix D, pp. 169 and 171, respectively.

Source: Environmental Science Associates, Inc.

PARKING

The new hotel garage would have about 140 marked stalls, up to 75 of which would be available for Olympic Club use on a non-exclusive basis./2/ Hotel employees would require about 25 spaces; hotel guests would require about 55. The total parking demand for the hotel portion of the project would be for about 80 spaces. With the project's proposed reduction of about 60 spaces in on-site parking, from about 200 to about 140 spaces, the net effect of the project would be to create a demand for about 140 additional spaces. At times of high demand, parking priority would go to Olympic Club members, followed by hotel guests and employees; public parking would have lowest priority in the subsurface garage. Therefore, some vehicles now parked on the site would be displaced to other parking areas in or near the Downtown, or would be replaced by other forms of transportation, such as public transit or ridesharing.

The project site is outside of the downtown core automobile control area established by the January, 1977, City Planning Commission in its adoption of amendments to the Transportation Element of the Master Plan (CPC Resolution 7647 as amended June 24, 1982). The provision of offstreet parking in the 'core' area is discouraged by the Plan. The project site is in a peripheral area, designated as an area "which may be appropriate for new short-term parking facilities." Whether parking facilities that replace demolished facilities are to be considered 'new' is not discussed in the Plan.

There are about 4,000 off-street public parking spaces within walking distance (about 1,000 ft.) of the site. About 500 spaces are now vacant and available during the afternoon, the peak use period. Vacant spaces are more numerous later in the evening, when hotel guest parking demand is greatest.

The cumulative demand for parking in the Downtown area from development under construction, approved, or proposed would create an estimated net deficit of about 11,500 spaces. Essentially no opportunity would then remain in the area of the project site to increase the number of parked vehicles, on-street or off-street. Vehicles displaced from the existing garage on the site would increase competition for parking spaces. Most vehicles displaced by the project would find alternate parking space in the Downtown, but some would not, and would join other would-be parkers in shifting to ridersharing or transit. This potential transit use would be in addition to that shown in Table 5, p. 57.

TRUCKS AND SERVICE VEHICLES

The building would have two 12-by-35 ft. off-street, enclosed loading stalls on Mason St. Trucks would back in from the curb lane or from a through lane of Mason St. Most of the service vehicles would be light vans or light trucks. Some would be automobiles. A few would be large trucks capable of blocking the sidewalk. Mason St. vehicular traffic would seldom be disrupted by activities at the loading dock. There would be about 10 service vehicle stops per day, or about 1 per hour. The 2 stalls would be expected to accommodate all vehicles except the large trucks, most of the time, without the necessity of curbside loading. These stalls conform in number and dimensions to the requirements of the City Planning Code and the City Planning Commission's Resolution 9286 concerning off-street freight loading requirements.

NOTES -Transportation, Circulation, and Parking

/1/ Effects were determined assuming that the cable cars would be operating by the beginning of project operation. The cable cars are currently out of service for about 2 years for scheduled maintenance.

/2/ "Available on a non-exclusive basis" means that the Olympic Club would have as many parking spaces up to 75 as it needed; however, no spaces would be reserved solely for Olympic Club use. The hotel parking garage management would coordinate with the Olympic Club management to anticipate Olympic Club parking requirements.

D. AIR QUALITY

IMPACTS

Air quality impacts associated with the project would occur in 2 phases; short-term, construction-related impacts and long-term impacts from project operation.

Short-term Construction Impacts

Demolition, excavation, and other construction activities would generate particulate (dust) that would affect local air quality for about 24 to 30 months. The State 24-hour standard for particulates, 100 micrograms per cubic meter, would probably be violated several times in the immediate project vicinity during the excavation phase of construction. Large-sized particulates (greater than 30 microns in diameter) are characteristic of construction particulates. These large-sized particulates settle out of the atmosphere rapidly with increased distance from the site. As a result, dustfall can be expected to occur on cars, streets, sidewalks and other outside surfaces within a 200 to 800 ft. radius of the building site. In addition, thin layers of dust would likely occur on indoor surfaces where open windows adjacent to the site are not protected by heavy curtains or fine-mesh screens.

If construction of other projects concurrent with the project occurred within a 200 ft. radius, the impacts of construction-generated particulates would be greater. The proposed Grosvenor Properties hotel condominium project presently under review is located within 200 ft. of the project site. Should concurrent excavation and ground clearing occur, air quality impacts could be exacerbated. Greater dustfall would occur and there would be an increased likelihood of accumulation of smaller-sized particulates (which tend to settle out of the atmosphere at a slower rate), which would reduce visibility as well as increase the probability of violations of standards. Should several projects be constructed concurrently, a greater area would also likely be affected. Under easterly wind conditions, construction activities at the approved 44 Compton St. project could affect the project site. Under westerly wind conditions, the project site could be affected by construction activities at the approved 747 Post St. and Midtown Towers projects.

Except to persons with respiratory problems, construction particulates are more of a nuisance than a hazard. Blowing dust may annoy people in the site vicinity when street-level winds exceed 12 miles per hour./1/ Wind speed ratios for the existing site (see Appendix B, pp. 148 to 162) indicate that street-level wind speeds would exceed 12 mph at freestream wind speeds of 30 mph or more, which occur less than 1% of the time in San Francisco. The ground floor retail businesses on Post and Mason Sts. within 100 ft. of the building site would be the most sensitive receptors to particulates.

Asphalt, oil-based architectural coatings, and paints used in construction would emit hydrocarbons. Hydrocarbon emissions from these sources are controlled by the Bay Area Air Quality Management District (BAAQMD) Regulation 8, Rules 3 and 15 respectively. Diesel powered construction equipment would emit (in decreasing order by weight) nitrogen oxides, carbon monoxide, sulfur oxides, hydrocarbons, and particulates./2/

Long-Term Operational Impacts

Once the project is completed and occupied, the major contributor of air pollutants would be emissions from project-generated traffic. In general, hotels do not generate as much peak-hour traffic as do office and commercial structures. As a result, the project would not measurably increase peak-hour pollutant concentrations. Roadside carbon monoxide (CO) concentrations for worst-case meteorological conditions were projected for road segments carrying project-generated traffic (see Table 7, p. 63).

The greatest increase in traffic and, concomitantly, pollutants due to the project would occur on Mason St. Projected roadside CO concentrations would increase 1.9% and 1.8% for 1-hour and 8-hour averaging times, respectively. Estimated daily project-related emissions of carbon monoxide, hydrocarbons, nitrogen oxides, sulfur oxides, and particulates are compared with the 1985 projected regional emissions in Table 8, p. 63.

In summary, implementation of the project would add to local and regional accumulations of hydrocarbons, CO, particulates, nitrogen oxides (precursors of ozone), and sulfur oxides. Project-related emissions would impede the attainment of standards for

TABLE 7: PROJECTED ROADSIDE CARBON MONOXIDE CONCENTRATIONS (ppm)/a,b/

Street	Averaging Time	1982	1987 Base/c/	1987 Base Plus Project
Post St. (between Taylor and Mason Sts.)	1-hour	15.1	11.8	11.9
	8-hour	8.3	6.5	6.6
Mason St. (between Post and Sutter Sts.)	1-hour	13.4	10.5	10.7
	8-hour	7.0	5.5	5.6
Sutter St. (between Mason and Powell Sts.)	1-hour	15.8	12.1	12.2
	8-hour	8.2	6.5	6.5

/a/ Calculations were made for worst-case dispersion meteorology according to BAAPCD (now BAAQMD), 1975, Guidelines for Air Quality Impact Analysis of Projects, Updated for CARB, EMFAC6C emission factors, 1981.
/b/ ppm: parts per million
/c/ 1987 Base includes non-analyzed growth and cumulative downtown development listed in Tables D-2 and D-3, Appendix D, pp. 169 and 171, respectively.

NOTE: The applicable standards are 20 ppm (1-hr) and 9 ppm (8-hr).

SOURCE: Environmental Science Associates, Inc.

TABLE 8: PROJECTED POLLUTANT EMISSIONS OF THE PROJECT IN 1987 (tons/day) COMPARED TO PROJECTED REGIONAL EMISSIONS

Contaminant	1987 Projected Pollutant Emissions (tons/day)		
	Project/a/	San Francisco Cumulative	Region/b/
Carbon Monoxide	0.112	12.1	2,340
Hydrocarbons	0.010	1.07	515
Nitrogen Oxides	0.011	1.52	543
Sulfur Oxides	0.001	0.16	182
Particulates	0.013	1.82	536

/a/BAAQMD, 1981, EMFAC-6C Vehicular Emission Factors.
/b/ Association of Bay Area Governments (ABAG), BAAQMD, Metropolitan Transportation Commission, 1982, 1982 Bay Area Air Quality Plan, p. 58. The region is the 9-county Bay Area Air Quality Management District.

SOURCE: Environmental Science Associates, Inc.

ozone and CO. However, they would not have a measurable effect on the reductions accomplished by BAAQMD control strategies, and would not have a statistically significant effect on citywide or regional concentrations, nor on the frequency of violations of the standards. Neither the project nor other development in the project vicinity would conflict directly with the control strategies of the Bay Area Air Quality Plan.

NOTES - Air Quality

/1/ California Department of Water Resources, Wind in California, Bulletin No. 185, January 1978.

/2/ U.S. EPA, Compilation of Air Pollutant Emission Factors, Supplement #4, 1974.

E. CONSTRUCTION NOISE/1/

Project construction would occur in 3 stages: demolition, site excavation, and construction. Throughout the 24 to 30 month construction period, trucks would haul away dirt and debris, and bring in building materials. Construction activities would temporarily increase noise levels at the site by 40 to 45 dBA./2/

Construction activities would cause a temporary increase in local noise levels. The proposed hotel's foundation would be supported on poured-in-place spread footings. Piledriving to install soldier piles for shoring the excavation pit walls would occur intermittently for about 1 week. Piledriving generates noise of up to 110 dBA at 50 ft. About 40 total hours of piledriving activity would occur over a period of several days. Actual driving of the piles would be only about 13 hours, or about 33% of this time; the remainder of the time would be for setting up equipment, which would not generate high noise levels. With the exception of noise caused by piledriving, the contractor would comply with the San Francisco Noise Ordinance (Part II, Chapter VII, San Francisco Municipal Code), including limiting noise emissions from powered construction equipment to 80 dBA at a distance of 100 ft. The Noise Ordinance also limits the allowable noise between 8 p.m. and 7 a.m. to 5 dBA above the ambient noise level measured at the property line, unless the San Francisco Department of Public Works issues a special permit. Noise levels typical of demolition and construction activities anticipated for the project are shown in Table 9, p. 65.

TABLE 9: TYPICAL COMMERCIAL/INDUSTRIAL CONSTRUCTION NOISE LEVELS AT 50 FEET

Construction Phase	Average Noise Level
Ground clearing	84 dBA
Excavation	89 dBA
Piledriving	110 dBA
Foundations	78 dBA
Erection	87 dBA
Finishing	89 dBA

SOURCE: D.N. May, Ph.D., 1978, Handbook of Noise Assessment, Van Nostrand Reinhold Environmental Engineering Series, p. 211.

The effects of project construction noise would depend on the intensity of the noise generated and the location of sensitive noise receptors. Because the surrounding area contains mixed uses (transient hotels, private clubs, theatres, artists' studios, residences, offices, a church, retail shops, and restaurants), residents, visitors, and workers would all be affected by project construction noise. On Wednesdays, the Marines Memorial Theatre within the adjacent Marines Memorial building has a 2 p.m. matinee; theatre rehearsals for evening performances occur on other weekday afternoons. Piledriving would disrupt matinees and afternoon rehearsals if done during these activities. Figure 10, p. 21, and Figure 14, p. 29, identify the land uses and buildings in the project vicinity, respectively.

Table 10, p.66, identifies buildings and uses within 75 ft. of the project site. Piledriving, would cause the highest average construction noise; if unmitigated, noise levels from 92 to 101 dBA would occur within the Marines Memorial building and the Olympic Club (assuming closed windows). These noise levels could induce formal public complaints and adverse health effects (earache, headache), and would interfere with conversation, concentration, and normal work activities. Interior noise levels ranging from 75 to 85 dBA during construction would disrupt normal conversation (shouting at 2 to 3 ft. would be necessary) and telephone communication would likewise be hampered./3/ Interior noise levels from 60 to 65 dBA would interfere with speech and concentration, distracting employees and requiring raised voices to communicate.

TABLE 10: PROJECTED INTERIOR NOISE LEVELS IN ADJACENT BUILDINGS DURING CONSTRUCTION ACTIVITIES

Building	Use/a/	Distance from the Site(ft)	Operable Windows	Pile-driving (110 dBA) (dBA)/b/	Excavation & Erection (89 dBA) (dBA)
Marines Memorial building/c/	private hotel	25	Yes	101	80
Olympic Club	private club	25	No	96	75
Medico-Dental building/d/	offices	40	Yes	97	76
Pacific Plaza Hotel/d/	hotel	40	No	92	71
First Congregational Church	church	50	Yes	95	74
Maison Manor/d/	residential	50	Yes	95	74
542 Mason/d/	residential	65	Yes	93	72
Hotel Cecil/d/	hotel	70	Yes	92	71
St. Francis Hotel Tower	hotel	75	No	86.5	65.5

NOTE: Calculations assume that construction noise (piledriving, excavation, and erection) is unmitigated; noise levels for piledriving, excavation, and erection are 100 ft. from source.

/a/ Uses identified as moderately sensitive: clubs, restaurants, retail stores, professional offices.
Uses identified as sensitive: hotels, dwellings.
Use identified as very sensitive: churches.

/b/ Piledriving would take up to 1 week.

/c/ The Marines Memorial Theatre, a 640-seat theatre located on the 2nd floor of the building, would be subject to noise levels of about 90 dBA during piledriving and about 75 dBA during excavation and erection. The theatre has no operable windows and is air-conditioned; consequently, a minimum noise reduction of 25 dBA was used.

/d/ Ground floor retail and restaurant uses.

SOURCE: Environmental Science Associates

A building located 250 ft. from the source of the highest construction noise (110 dBA) would have an interior noise level for the 1-week piledriving period of about 76 dBA (assuming there are no intervening buildings, and windows are closed). At the highest noise level, construction noise would be audible up to a distance of about 500 ft.; beyond that point, the noise level would be equivalent to the ambient street noise level and would not interfere with office, hotel, or residential activities.

Trucks transporting excavated materials and construction materials produce noise levels of 83 to 93 dBA at 50 ft./4/ Maximum noise impacts would occur during the first 2 months of construction when large haul trucks would transport excavated material from the site, momentarily interrupting conversation along the haul route. The impact of truck traffic from project construction on the noise level along streets in the project vicinity cannot be estimated because the number of truck trips per day and their routes to and from the site are unknown.

Compatibility with Existing Noise Levels. The City and County of San Francisco has adopted guidelines for determining the compatibility of various land uses with different noise environments (Environmental Protection Element of the San Francisco Comprehensive Plan, adopted by City Planning Commission Resolution No. 7244, September 19, 1979, p. 19). The existing exterior L(dn) levels at the site are estimated to be about 65 to 70 dBA./5/ For noise levels over 60 dBA, the guidelines indicate that an analysis of noise reduction requirements should be made and noise insulation features be included in the building design./6/ The State of California (California Administrative Code Title 25, Chapter 1, Subchapter 1, Article 4) requires that the interior CNEL, with windows closed, for newly constructed hotels be less than or equal to 45 dBA./7/ The State requires that an acoustical analysis be done, showing that the proposed building has been designed to limit noise inside the guest rooms to 45 dBA with windows closed. The City requires that this analysis be submitted to the Superintendent of Building Inspection with the application for a site permit. If windows in the guest rooms of the proposed project are designed to open, then L(dn) levels inside the rooms, with windows open, would be reduced from exterior levels by 15 to 20 dBA to about 45 to 55 dBA. Intermittent noise from individual trucks and buses passing the site would cause interior noise levels to rise temporarily by about 15 dBA. Noise levels above 60 dBA interfere with normal conversation.

Cumulative Construction Noise Impact. Although there are 14 known proposed projects within a 2,000 ft. radius of the project site, only 1, the proposed Grosvenor hotel condominium project, is within 500 ft. (it is about 200 ft. away). The construction schedule for the Grosvenor project is not known. However, even if construction were concurrent with that of the project, the distance and the intervening buildings would mitigate construction noise to a level equal to the present exterior noise levels. Depending on construction schedules and haul routes, cumulative truck noise with other projects in the vicinity may increase construction-related truck noise.

NOTES - Construction Noise

/1/ For discussion of fundamental acoustical concepts and measurement units, refer to Appendix F, p. 179.

/2/ dBA denotes a measure of sound in units of decibels (dB). The "A" denotes the A-weighted scale, which simulates the response of the human ear to various frequencies of sound.

/3/ U.S. Department of Health, Education, and Welfare, Health Services and Mental Health Administration, 1972, Occupational Exposure to Noise.

/4/ Bolt, Beranek and Newman, December 31, 1971, Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, U.S. Environmental Protection Agency, p. 11.

/5/ L(dn) is an averaged sound level measurement, based on human reaction to cumulative noise exposure over a 24-hour period, which takes into account the greater annoyance nighttime noise. Ten dBA are added to measured or calculated noise levels for the period between 10 p.m. and 7 a.m.

/6/ San Francisco Comprehensive Plan, Environmental Protection Element, adopted September 19, 1974, p. 17.

/7/ CNEL, the Community Noise Equivalent Level, is similar to L(dn) except that noise level measurements taken between 7:00 p.m. and 10:00 p.m. are weighted 5 dBA higher than daytime sounds, in addition to the 10 dBA 10:00 p.m. to 7:00 a.m. weighting.

F. SEISMICITY AND HYDROLOGY

SEISMICITY

The project would be designed to meet the seismic design standards of the San Francisco Building Code. The building would be designed in accordance with Section 2314.D.2 of the San Francisco Building Code. Seismic standards for building cladding are also specified in the San Francisco Building Code.

Groundshaking would be the greatest potential hazard to the structure during an earthquake. The project would incorporate ductile steel framing designed, analyzed, and constructed to resist major earthquake motions without collapsing. For major earthquakes (above Richter magnitude 7.0), steel-framed structures so designed may suffer damage, but would probably not collapse. Hanging light fixtures, ceiling and wall partitions, and other attached non-structural elements of the building would be firmly attached to reduce the likelihood of their falling during an earthquake. Bookcases and other unattached objects within the building may fall, and windows may break, with some glass falling onto streets, sidewalks, and adjacent buildings. Falling glass, and

possibly brick paneling from the project exterior, could land on parts of Mason and Post Sts. and their sidewalks. Safety glazing would be used in the skylight of the central atrium to reduce the hazard of falling glass during an earthquake. Exterior windows in the project have been designed with a 2-ft. setback, providing a deep sill to catch breakage falling outward from the building.

Under the San Francisco Building Code, structures must be designed to resist, without failure, the motions induced by a major earthquake. The Code contains specific requirements for materials, welding, and bolting, to ensure that a building would not collapse under vertical or horizontal motions. The Code specifies no requirements for seismic response of window glass. The glazing, panels, and exterior walls, as well as their connections, are considered to be a part of, or an attachment to, the structure's exterior wall and are required to resist lateral loads primarily related to wind shear but also to a major earthquake (San Francisco Building Code, Sections 2314.A, 2314.D, and 2314.K).

Liquefaction and subsidence would probably not present a hazard for the hotel during an earthquake. The new structure would rest on poured-in-place concrete spread footings on dense clays and sands, which are capable of supporting the structure's load. Seismically induced liquefaction and subsidence may cause adjacent streets to crack and buckle; water mains, pipes, and underground utility lines may break.

Since more people would be on the site as a result of project construction, more people would be exposed to potential seismic hazards. The project would include all emergency response systems stipulated by the Life Safety Code to reduce hazards to occupants during an earthquake or fire.

HYDROLOGY

Extensive dewatering would be required during project excavation and construction. Because excavation would average 65 ft. in depth, and the groundwater table is assumed to be about 40 ft. below grade, dewatering is expected to be substantial. Water from dewatering operations would be discharged into the storm drain system.

All dewatering would be performed from sumps located within the building site. Shoring and underpinning of excavation and adjacent footings would be done by conventional

means with soldier piles and lagging to provide adequate vertical and lateral soil stability and to maintain the safety of the construction crew.

Dewatering during construction could induce local subsidence in compressible geologic materials (i.e., artificial fill and soft Bay mud). Walls of older brick and masonry buildings, such as the adjacent Olympic Club, might crack or lean and floors might be bent or tilted. Streets and sidewalks could develop swales, cracks, or "potholes", thereby creating potential traffic hazards. Underground utility lines might be bent or broken. The project sponsor would conduct a lateral and settlement survey during construction to detect any movement or setlement of adjacent structures. A surety bond would be posted to insure against damage to City sidewalks, streets, or utilities. Excavation pits would be shored to prevent slumping or lateral soil movement of the pit walls.

The groundwater level is expected to return to normal after excavation. Because a portion of the basement would extend below the groundwater level, drains would be installed at the basement level to prevent seepage into the building.

G. ENERGY

LOCAL ENERGY SUPPLY

Pacific Gas and Electric Company (PGandE) would provide electricity and natural gas to the proposed project through its existing distribution systems. PGandE obtains some of its electicity from renewable hydroelectric and geothermal sources. However, non-renewable sources of energy--coal, oil, natural gas, and nuclear fuels--are used to generate most of the electricity PGandE provides. PGandE plans to meet new demands for electricity in its northern California service area primarily through nuclear and hydroelectric sources./1/ PGandE has long-term agreements with Southern California utilities (California Power Pool Agreement) and Pacific Northwest utilities (Pacific Northwest-Southwest Intertie) for energy pooling, exchange, and purchase that will be used, in part, to meet future peak-period demand. PGandE also expects co-generation (i.e., production of electricity from waste heat generated by industrial processes) and wind energy projects to help meet future demand.

CONSTRUCTION ENERGY REQUIREMENTS

The project would require an unknown amount of energy for demolition of the existing structure, excavation, and removal of excavated material and rubble to a disposal site.

Energy required for project construction, including fabrication and transportation of building materials, would be about 360 billion British thermal units (Btu), the equivalent of about 62,000 barrels of crude oil./2,3/

OPERATIONAL ENERGY REQUIREMENTS

Proposed Energy System

The structure would be heated by a forced-draft, gas-fired boiler and hot water would be supplied by a natural gas unit. PGandE's Steam Heating District could supply part of the building's space heating needs, depending on steam availability. The building's exterior would have less than the maximum allowable window and glass area to conserve energy used for space heating. The noise insulation required in the interior walls would also help conserve energy.

Air conditioning would be provided by electric chillers. Fluorescent lights would be installed in the corridors and bathrooms. Lamps within the guest rooms would be incandescent. The temperature in each guest room would be controlled by individual thermostats. Preliminary energy consumption projections indicate that the structure would comply with energy efficiency standards of Title 24 (Building Energy Efficiency Standards) of the California Administrative Code./4/

Energy Consumption

The project would require about 2.7 million kWh of electricity per year (about 27 billion Btu at-source), based on preliminary energy consumption data. Electricity would be used primarily for lighting, ventilation, and cooling. Average monthly electrical consumption would be about 220,000 kWh, or about 1.1 kWh per sq. ft. per month. The proposed hotel's projected annual energy consumption is equal to the average electrical use of about 800 residential customers in San Francisco. Peak demand would probably occur on afternoons in late summer. Peak demand could coincide with the peak

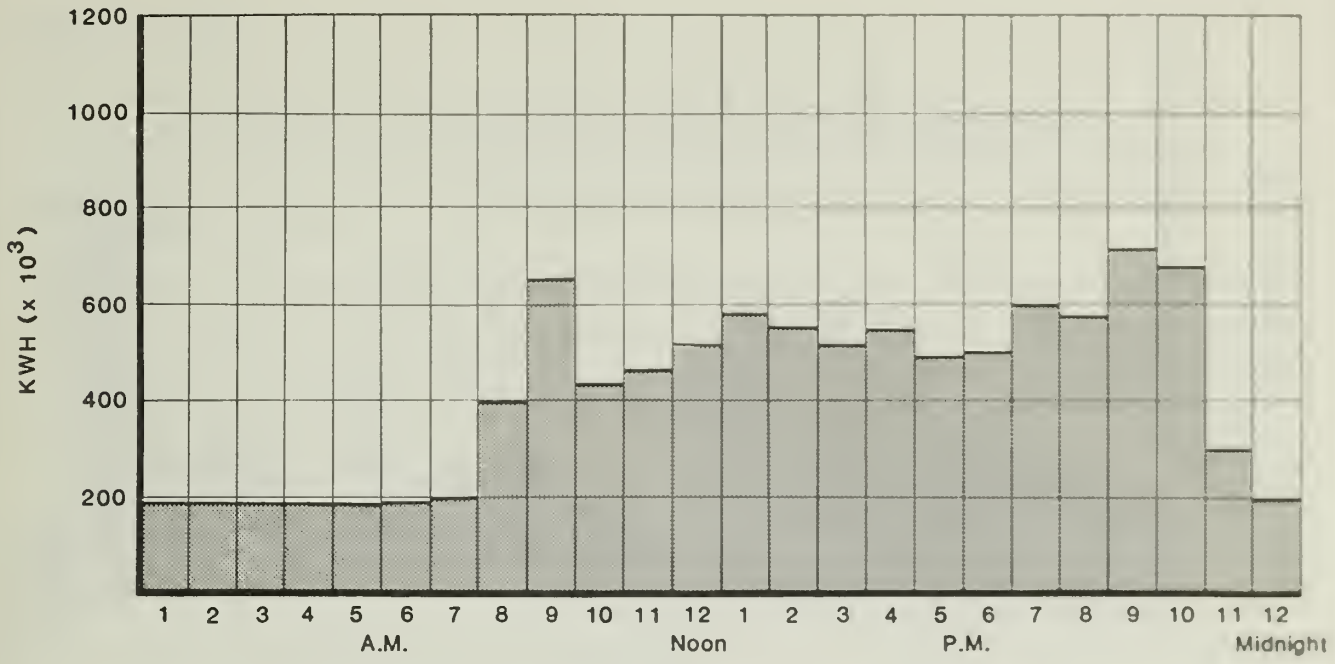
electrical demand period for the PGandE service area, which usually occurs in August. The project's annual energy consumption curve is relatively flat. Projected daily and annual electric demand curves for the proposed hotel are shown in Figure 22, p. 73.

The proposed hotel would require about 29 billion Btu of natural gas at-source per year, used primarily for space and water heating; this would be about 94,000 Btu per sq. ft. per year, or about 7,800 Btu per sq. ft. per month. The project's estimated natural gas consumption is equal to the average amount of natural gas consumed annually by about 2,230 residential customers in San Francisco. Peak demand would probably occur during early morning hours in December. Projected daily and annual project natural gas demand curves are shown in Figure 23, p. 74.

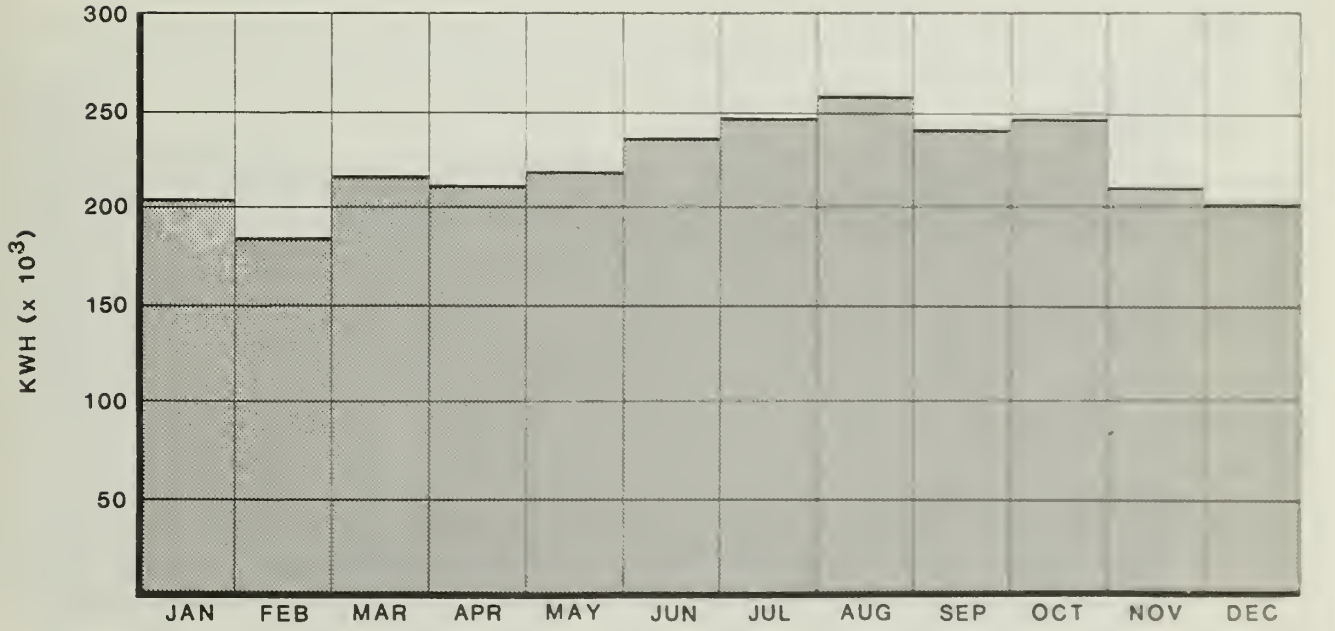
The project would make no use of active solar installations. Because of the proposed hotel's height and proximity to the Marines Memorial building and the Olympic Club, it would cast new shade on these buildings (see Chapter IV. B, p. 41). Such shadows would reduce passive solar input into these buildings and would lessen the feasibility of future active solar installations, should they be considered, for these structures.

CUMULATIVE ENERGY CONSUMPTION

Although the project's energy demand would probably not have a substantial effect on resource extraction, it would contribute to cumulative energy consumption that will result in depletion of nonrenewable energy resources. Energy use in downtown San Francisco by approved and recently proposed development other than the project would increase annual electricity consumption by more than 240 million kWh, or about 13% of PGandE's projected systemwide increase over the next 10 years, and would increase annual natural gas consumption by more than 520 million cu. ft. The total increase in energy demand resulting from approval of these developments would be about 3 trillion Btu annually, equivalent to about 500,000 barrels of oil per year.



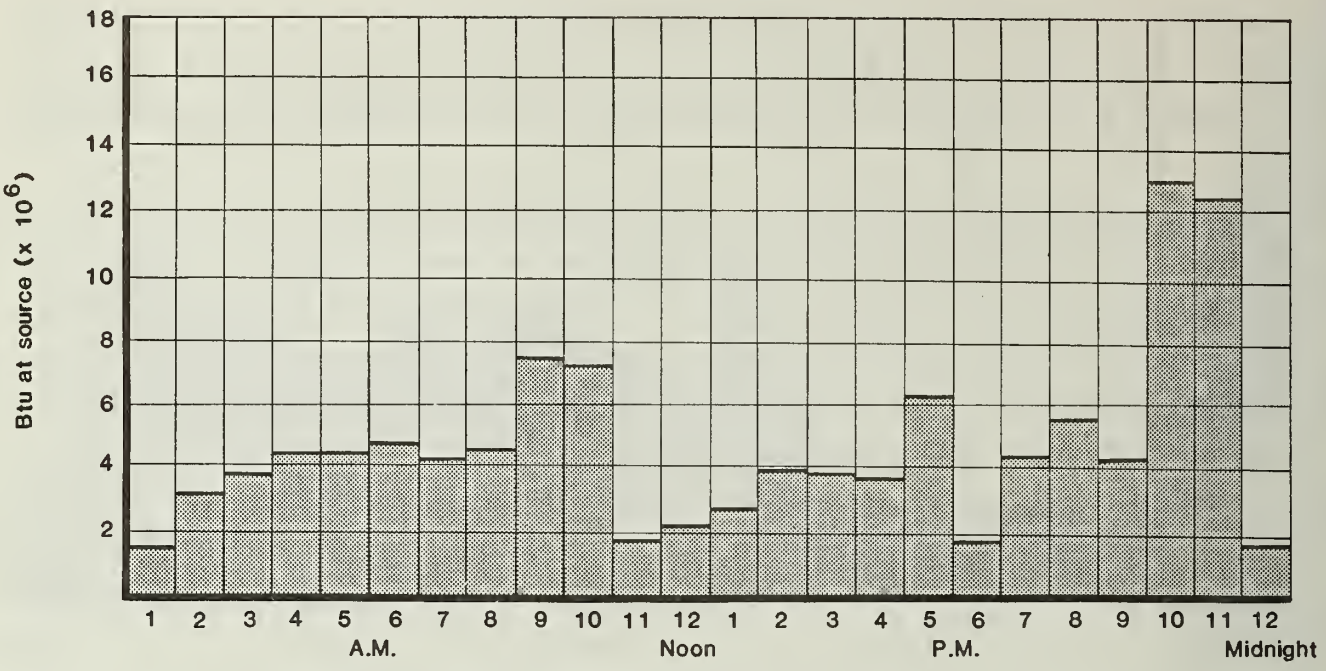
Peak Day Electrical Demand (August)



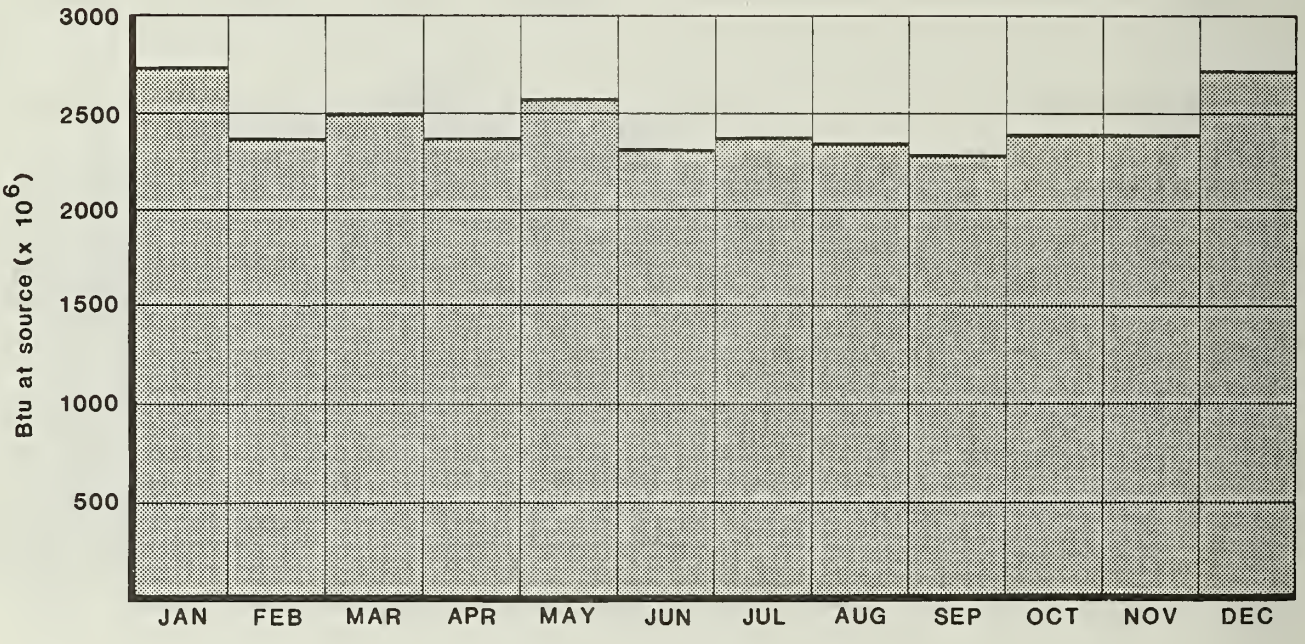
Average Monthly Electricity Consumption

FIGURE 22: Projected Electrical Load Distribution

SOURCE: Bentley Engineering Company



Peak Day Demand of Natural Gas (January)



Average Monthly Natural Gas Consumption

FIGURE 23: Projected Natural Gas Load Distribution

SOURCE: Bentley Engineering Company

NOTES - Energy

/1/ Pacific Gas and Electric Company, 1982, Forecast of the Demand for Electricity within the Pacific Gas and Electric Company Service Area 1982-2002.

/2/ Hannon et al., "Energy and Labor in the Construction Sector," November 24, 1978, Science, Vol. 202.

/3/ British thermal units (Btu) are units for measuring energy. One Btu is the quantity of heat required to raise the temperature of 1 pound of water 1 degree Fahrenheit at sea level. The term "at-source" means that adjustments have been made in the calculation of the Btu energy equivalent to account for losses in energy that occur during generation and transmission of the various forms of energy, as specified in: Energy Resource Conservation and Development Commission, 1977, Energy Conservation Design Manual for New Nonresidential Buildings, Energy Resources Conservation and Development Commission, Sacramento, CA; and Apostolos, J.A., W.R. Shoemaker, and E.C. Shirley, 1978, Energy and Transportation, Sacramento, CA (Project 20-7, Task 8).

/4/ Energy consumption figures for the proposed hotel are based on computer energy load projections by Bentley Engineering Company.

H. EMPLOYMENT, HOUSING, AND FISCAL ISSUES

The impacts discussed in this section are not physical environmental effects as defined by the California Environmental Quality Act. They are included here for information only.

The Olympic Club has been excluded from the employment, housing, and fiscal impact analyses because the Club would be retained on the project site and it is assumed that no change in employment at the Club would occur.

Hotel Space and Occupancy

The proposed project would have about 350 guest rooms. Average room rates would be about $145 (1982 dollars) per night with an expected average annual occupancy rate ranging from about 72% to about 78%. Room demand for the project would come from the following visitor sectors/1/:

Tourists and Tour Groups	21%
Business and Corporate Meetings	64%
Conventions	15%
	100%

A roof-top restaurant and a coffee shop in the lobby are planned for the hotel. About 1,900 gross sq. ft. of retail space would be provided, including a newsstand/gift shop, a beauty shop, and a health club.

Relocation

A public parking garage and a car rental agency (together employing about 30 persons) would be displaced from the project site. The car rental agency manages the parking garage, so the 2 operations are considered 1 business. The present tenants are prepared to move but have not chosen a site for relocation. The car rental portion of the existing operation would probably relocate to 1 or more smaller sites within the downtown area, preferably to existing garages that could accommodate a combined car rental/parking operation./2/

Short-Term Construction Employment

Project construction would provide about 640 person-years of labor, or an average of about 280 full-time jobs at any time during the 24- to 30-month construction period. Construction wages would average approximately $40,000 per year./3/ Construction workers would be expected to spend a portion of their wages for goods and services in the San Francisco Bay Area. Assuming a construction employment multiplier of 1.55, about 990 additional person-years of employment would be generated in the Bay Area./4/

Permanent Employment

The project would provide full-time employment for about 320 people./3/ The net increase in full-time employment at the site, after subtracting jobs in the 2 operations to be displaced from the site, would be about 290 jobs. This is the approximate number of jobs that a 50,000 sq. ft. office building would create. Approximate projections of employment by category are as follows: about 45% would be in food and beverage services; about 32% would be in housekeeping, laundry, and room services; about 13% would be in sales, administration, and administrative support; and the remaining 15% would be in maintenance, security, and other services./5/ Many of these permanent jobs, particularly in maintenance, food service, and housekeeping, would require little or no previous training and would provide entry-level employment for low- and moderate-income persons. These jobs could be held by current residents of the San Francisco Bay Area rather than by people moving into the Bay Area from elsewhere. Projected wages and salaries paid hotel workers are based on union wage scales, which range from about $6.50 per hour (excluding tips) for hotel maids to about $40,000 annually for management executives (1983 dollars)./6/

Secondary Economic Effects.

Secondary employment and income effects would result from the multiplier effect of expenditures made by permanent employees and guests in the proposed hotel. As employees and hotel guests made purchases in retail stores and restaurants and for entertainment, their purchases would generate income to those who sell goods and services. This income, in turn, would create secondary income and employment opportunities resulting in increased sales and business tax revenues generated to the City, additional jobs and income for San Francisco and other Bay Area residents, and an overall increase in economic activity in the San Francisco Bay Area.

Secondary income that would be generated in San Francisco by the estimated 320 permanent employees of the proposed project cannot be reliably estimated because the percentages of disposable income that would be spent in San Francisco by hotel employees who would reside in San Francisco and in other Bay Area communities cannot be determined. Estimates of hotel guest expenditures at San Francisco establishments are provided by the San Francisco Convention and Visitors Bureau. Based on 1982 estimates of the Bureau, the average convention and non-convention expenditures made by hotel guests at San Francisco establishments (other than at the hotels themselves) would be about $65 for each night a visitor spent in San Francisco./7/ Based on a 72% average occupancy rate and an average room occupancy of 1.5 persons, the project would generate an estimated 138,000 visitor-nights per year. This would result in annual expenditures of about $8.9 million (1982 dollars) in San Francisco by project guests outside of the hotel. Those expenditures would be distributed as shown in Table 11, p. 78.

Visitor expenditures in San Francisco are an important factor in the City's economy because the majority of tourists, commercial travelers, and convention delegates are from outside the City and are spending "new money" that originates from outside of the Bay Area. This new money would be income created in the City without subtracting income from other sectors of the San Francisco economy.

HOUSING DEMAND

The project would have an insignificant effect on housing demand in San Francisco, since current City residents would be expected to fill most of the jobs that would be created by the project (see discussion on p. 76).

TABLE 11: ANNUAL EXPENDITURES AT SAN FRANCISCO ESTABLISHMENTS BY PROJECT GUESTS (by category, in millions of 1982 constant dollars)/a/

Category	Distribution (%)	Expenditure
Restaurant Meals	32.7	2.9
Retail Sales	24.5	2.2
Entertainment	14.6	1.3
Local Transportation	6.8	0.6
Sightseeing	4.1	0.4
Auto (Oil, Gas)	5.6	0.5
Other Items	11.7	1.0
Total	100.0	8.9

/a/ Does not include money spent at the proposed hotel for room accommodations and food and beverages.

SOURCE: San Francisco Convention and Visitors Bureau, unpublished data, and Environmental Science Associates, Inc.

FISCAL ISSUES

Revenues to the City

Property Tax. The project would have a fair market value of about $60 million (in 1982 dollars). Property in California is now assessed at 100% of fair market value. Based onthe 1982-83 tax rate of $1.17 per hundred dollars of assessed value, the project would generate about $702,000 in property tax revenues in 1985. This is a net increase of about $678,000 over property tax revenues generated on the site in 1982-83. If the distribution of property tax revenues remains the same as in 1982-83, the project would generate about $599,000 in revenues to the City and County of San Francisco General Fund in 1985, a net increase of about $585,000 over property tax revenues generated to the City by the site in 1982-83 (see Table 12, p. 79).

Sales and Parking Tax. Annual receipts from the proposed hotel's restaurants and food and beverage service would be about $6.7 million./1/ Receipts from the hotel's 1,900 gross sq. ft. of retail space would be about $230,000 (average retail sales are estimated to be about $120 per sq. ft. per year). Based on a tax rate of 1.25%, the hotel would generate about $86,000 in sales tax revenues to the City. The 0.5% transit

tax portion of sales tax revenues would generate about $34,500. Of that amount, about $25,900 would go to BART and about $8,600 would be distributed by the Metropolitan Transportation Commission among BART, Muni, and AC Transit. Total expenditures by project guests in San Francisco establishments would be about $8.9 million, generating about $91,000 in indirect sales tax revenues to the City and about $37,000 in transit tax revenues./8/

TABLE 12: PROJECTED DISTRIBUTION OF PROPERTY TAX REVENUES FROM PROJECT IN 1985 (1982 constant dollars)

Agency	Ad Valorem Tax Rate (1982-83)	Distribution(%)/a/	Revenues/b/
City and County of S.F.	$0.998	85.3	$599,000
S.F. School Districts	0.101	8.6	61,000
Bay Area Air Quality Management District	0.002	0.2	1,000
BART	0.069	5.9	41,000
TOTAL	$1.170	100.0	$702,000

/a/ Numbers may not add due to rounding.
/b/ Based on an assessed valuation of $60 million.

SOURCE: San Francisco Controller's Office; Environmental Science Associates, Inc.

Receipts from the parking garage to be included in the proposed project would be about $1,200,000 annually./1/ This would generate about $180,000 in revenue to the City from the 15% parking tax.

Hotel Tax. Based on projected total room sale revenues of about $13 million (for 72% occupancy and average room rate of $145) and a hotel tax rate of 9.75%, the project would generate about $1.3 million annually in hotel tax revenues. If the distribution of these revenues remains the same as in 1982-83, the project would generate about $320,000 annually to the City's General Fund. About $530,000 would be budgeted for bond redemption for the George R. Moscone Convention Center, about $130,000 for the Hotel Publicity and Advertising Fund, about $92,000 for the Convention Facilities Fund, about $92,000 for the Performing Arts Facilities - War Memorial Fund, about $66,000 for Candlestick Park Bond debts, and about $66,000 for financing low-income housing in the

Yerba Buena Center Redevelopment Area. Future distributions of hotel tax revenue could change as the result of actions taken by the Board of Supervisors. The $1.3 million of hotel tax revenues resulting from occupancy of the project would be new revenues since the new hotel would not displace any existing hotel rooms.

A summary of taxes the hotel would be expected to generate to the City of San Francisco in 1985 is shown in Table 13, below.

TABLE 13: SUMMARY OF PROJECTED TAXES THE PROPOSED HOTEL WOULD GENERATE IN 1985 (1982 constant dollars)

Tax	Assessment Basis	Amount
Property	$1.17 per $100 of hotel's assessed value	$702,000
Sales (direct)	1.25% of guest expenditures in hotel	$86,000
Sales (indirect)	1.25% of guest expenditures outside hotel	$128,000
Parking	15% of receipts from hotel parking garage	$180,000
Hotel	9.75% of hotel room receipts	$1,300,000
TOTAL		$2,396,000

Source: Environmental Science Associates, Inc.

Costs and Net Revenues

The City's General Fund provides a subsidy to Muni's operating budget that covers the difference between Muni's costs and the revenue that Muni receives from fares and from federal and state sources. This subsidy represents the cost of Muni to the City. The average operating deficit per ride is estimated by Muni to be $0.39./9/

About 45 project employees and about 20 hotel guests would ride the Muni during peak hours. This would create a Muni deficit of about $34,000 annually. The project would help pay for the Muni deficit, however, through its revenue contributions to the General

Fund. In the 1982-83 budget, 10% of discretionary General Fund revenues were allocated to Muni. If this percentage were to remain constant, the project would generate about $125,000 in General Fund revenues to Muni annually. This would result in a net project subsidy to Muni of $91,000.

About 15 project employees would ride BART daily, resulting in a deficit of about $7,900 annually. BART's revenues from sales and property taxes from the project would be about $71,600 annually. For each BART passenger trip an average of $1.00 is paid by fares, and an additional $1.12 in costs must be supported by other revenue sources./10/ This would result in a net project subsidy to BART of about $63,700 annually.

Cumulative Hotel Development

According to the San Francisco Convention and Visitors Bureau, over 7,000 additional hotel and motel rooms, exclusive of the project, are planned or under construction in San Francisco./11/ Over 4,000 of these rooms are scheduled for completion before mid-1985. If all are constructed, the stock of San Francisco hotel rooms renting for $60 or more per night (1981 dollars) would increase by 31%./12/

Several factors affect the demand for hotel rooms in San Francisco. National economic trends are an important predictor of domestic tourists, but other factors such as air fares and hotel labor disputes have affected the number of visitors. The international economy, especially the exchange rate of foreign currencies with the American dollar, affects the number of foreign visitors. About 35% of all pleasure travelers in San Francisco in 1980 were from abroad./13/ The number of convention and business visitors also affects the demand for hotel lodging.

These factors combine to make predictions of hotel room demand uncertain. One public accounting firm estimates that the demand for hotel rooms in San Francisco will increase at an average annual compounded rate of 2.6% for quality hotel rooms between 1981 and 1989./14/ One of the growth factors cited is the opening of George R. Moscone Convention Center, which is expected to attract many large conventions that formerly have gone to other cities because San Francisco lacked adequate facilities./8/ Since major convention organizers plan their events 5 to 7 years in advance, the full impact of Moscone Center will not occur until 1986, when convention delegates staying in San Francisco hotels are projected to be about 1 million per year./12/

The project would increase the supply of hotel lodging by about 350 rooms. The sponsor feels that future demand will be sufficient for the hotel to achieve profitable occupancy. A decline in tourism in 1981-82 resulted in lower average occupancy rates than in 1980./12/ Hotels proposed and under construction will increase the supply of hotel rooms. Forecasting the likelihood of an oversupply of hotel rooms is not possible due to the uncertainty of future economic conditions.

Neighborhood-serving businesses may be displaced as land values and rents increase. Development pressures to intensify the existing land uses may also occur. Unquantifiable social costs, such as psychological hardship to remaining residents caused by a loss of friends and increased costs of goods and services for neighborhood residents, could result. Such social costs could result from cumulative hotel development in the eastern North of Market Area.

The effects of cumulative hotel development on hotel room demand and the tourist industry in San Francisco and the eastern edge of the North of Market Area are discussed in Hotel Ramada, San Francisco, Final EIR, EE 80.171, certified January 29, 1981, pp. 101-104d, and incorporated by reference into this EIR. In summary, this document concludes that there would be sufficient hotel room demand to absorb the hotel rooms currently proposed or under construction in the downtown area. New hotel construction would strengthen the tourist industry, especially for the convention-tourist market and would generate new hotel tax revenues to the City. The construction of quality hotel rooms would not necessarily decrease the pressure for conversion of low-cost residential hotel units.

NOTES - Employment, Housing, and Fiscal Issues

/1/ Pannell Kerr Forster, July 1981, Study of Potential Market Demand and Statements of Estimated Annual Operating Results for a Proposed Hotel on the Olympic Club Post Street Property in San Francisco, California. p. v-21.

/2/ Relocation information is based on a telephone conversation with Pat Black, Branch Manager of National Car Rental, on February 11, 1983.

/3/ Bruce Jones, Embarcadero Center Inc., telephone conversation, March 8, 1983.

/4/ A construction multiplier of 1.55 was derived from Cooperative Extension Service, University of California, Berkeley, San Francisco Bay Area Input-Output Model 1967-1974.

/5/ Based on median staffing levels from Laventhol & Horwath, 1982, U.S. Lodging Industry 1981.

/6/ According to Gary Guthman, Organizer, Hotel and Restaurant Employees and Bartenders Union No. 2 (AFL-CIO), telephone conversation, March 4, 1983, all class A hotels in San Francisco have union-organized employees.

/7/ Economic Research Associates, Survey of San Francisco Visitors, First Quarter 1982. Prepared for San Francisco Convention and Visitors Bureau.

/8/ Indirect sales tax revenue would accrue to the City from only part of total tourist expenditures since the tax does not apply to services or sale of certain merchandise, in particular: food for human consumption except meals furnished by restaurants and similar establishments; newspapers; and magazines published more often than once every 3 months. Estimated indirect sales tax revenues were based on the following assumptions contained in San Francisco Planning and Urban Renewal Association, June 1975, Detailed Findings; Impact of Intensive High-rise Development in San Francisco, Final Report, pp. 265-277:

	Taxable Sales (%)
Restaurants	100%
Sightseeing	50%
Retail Sales	100%
Auto-Related	85%
Entertainment	50%
Other Items	95%
Local Transportation	0%

/9/ Bruce Bernhard, Chief Accountant, San Francisco Municipal Railway; telephone conversation, August 20, 1982. The 1981-82 per-paid-passenger deficit figure will be revised in the 1982-83 fiscal year.

/10/ Ward Belding, Senior Economic Analyst, BART; telephone conversation, August 20, 1982.

/11/ San Francisco Convention and Visitors Bureau, "San Francisco Bristles with Hotel Blueprints," November, 1981.

/12/ Dale Hess, General Manager, San Francisco Convention and Visitors Bureau, telephone conversation, November 7, 1981. About 14,000 hotel rooms in San Francisco cost $60 or more per night. Percent calculations based on 4,297 additional rooms by 1985 (see footnote 11), all costing at least $60 per night.

/13/ San Francisco Convention and Visitors Bureau, 1980 Annual Report.

/14/ Kirke Wrench, CPA Supervisor, Pannell, Kerr, Forster, Certified Public Accountants, telephone conversation, November 15, 1982.

I. GROWTH INDUCEMENT

About 7,000 quality hotel rooms have been either approved or proposed for the downtown San Francisco area since 1980. The project would add about 350 rooms, or 5%, to this total. The proposed project is not expected to contribute to an oversupply of hotel rooms in San Francisco./1/

The proposed project would not require any infrastructural improvements that would open or intensify land development opportunities that do not already exist. It would require no new construction or extension of public service or utility systems and would occur in an already developed downtown urban setting. Hotel employees who would be new to the region would demand a variety of commercial, social, medical, and municipal services. This demand would indirectly cause growth attributable to the hotel.

The proposed hotel, which is north of the North of Market Area, could contribute to cumulative hotels developments' growth-inducing effects on retail uses in the project area and in the eastern North of Market Area; the proposed hotel could also contribute to the conversion of residential hotels to tourist hotels in these areas. The proposed hotel would not displace any low-income residents from either in or outside of the North of Market Area. Cumulative hotel development could, however, raise property values and, therefore, rents (see Chapter IV.H, p.75).

NOTE - Growth Inducement

/1/ San Francisco Convention and Visitors Bureau, "San Francisco Bristles with Hotel Blueprints," November 1981.

V. MITIGATION MEASURES THAT WOULD MINIMIZE THE POTENTIAL IMPACTS OF THE PROJECT

In the course of project environmental review, measures have been identified that would reduce or eliminate potential environmental impacts of the proposed project. These are identified below. Measures incorporated into the project during the Initial Study and additional measures adopted by the project sponsor subsequent to the Initial Study are listed under Measures Included in the Project./1/ Measures rejected or still under consideration by the project sponsor for possible inclusion in the project are listed under Measures Not Included in the Project. Any or all of the Measures Not Included in the Project could be required by the City Planning Commission to be included in the project as conditions of approval.

MITIGATION OF URBAN DESIGN AND ARCHITECTURAL RESOURCES IMPACTS

Measure Included in the Project

- The project would provide pedestrian amenities including street trees and sidewalk plantings to enhance the pedestrian environment on sidewalks adjacent to the project site.

MITIGATION OF TRANSPORTATION, CIRCULATION, AND PARKING IMPACTS

Measures Included in the Project

- The entry court of the hotel would accommodate buses for safe loading and unloading of passengers, and to minimize potential pedestrian and vehicular traffic congestion.

- A transportation broker would be located in the hotel lobby to encourage transit use through the on-site sale of BART and Muni passes and Golden Gate Transit commute books to employees, and to provide a clearinghouse for car pool and van pool information in cooperation with the RIDES for Bay Area Commuters program.

- The building would have "eyebolt" fixtures suitable for suspending Muni trolley wires on the Post St. frontage in accordance with the Muni planning department. should Post St. be proposed as a route for electrified trolley cars.

Measure Not Included in the Project

- The project sponsor could have pedestrian walkways installed in the parking lanes of Post and Mason Sts. adjacent to the building site during construction, to minimize the disruption of pedestrian flow. The sponsor is considering this measure. and would decide to accept or reject it after having evaluated construction vehicle access to the site in conjunction with the local contractor to be retained, and after consultation with the San Francisco Department of Public Works. The decision would be made at the time a construction permit is issued.

MITIGATION OF AIR QUALITY IMPACTS

Measures Included in the Project

- All unpaved demolition and construction areas would be wetted at least twice a day during excavation to reduce dust emissions. This would reduce particulate emissions (dust) by about 50%.

- The general contractor would maintain and operate construction equipment in such a way as to minimize exhaust emissions. During construction, trucks in loading or unloading queues would be kept with their engines off. when not in use, to reduce vehicle emissions.

MITIGATION OF CONSTRUCTION NOISE IMPACTS

Measures Included in the Project

- The general contractor would construct 5-ft. high barriers on the south, east, and west side of the site and around stationary equipment such as compressors. This would reduce construction noise by as much as 5 dBA from the levels noted in Table 10, p. 66. Higher barriers would be constructed on the north side of the site to provide maximum noise insulation for the Marines Memorial Theatre.

- The sponsor would muffle and shield intakes and exhausts, and shroud or shield impact tools. Where such equipment is available and feasible, the contractor would use electric rather than diesel or gas construction equipment. Electric equipment is generally quieter than equipment powered by gas or diesel. The choice of equipment would depend on relative cost, ease of use, and power output of electric equipment as compared to diesel or gas equipment.

- The sponsor would meet with the Department of Public Works prior to the start of construction to determine an appropriate construction schedule to minimize noise impacts.

- The sponsor would not schedule piledriving on Wednesday afternoons from 2:00 to 5:00 p.m. during Marines Memorial Theatre matinee performances.

Measures Not Included in the Project

- The contractor could pre-drill holes needed for soldier piles to shore the excavation pit. This would reduce noise emissions at the site during construction. The project sponsor is currently considering this measure. The decision of whether to pre-drill pile holes would be made when detailed excavation and foundation plans have been developed; the decision would be based on the ability of site soils to support pre-drilling, as interpreted from the soils report.

MITIGATION OF ENERGY IMPACTS

Measures Included in the Project

- Sunlight through the central atrium would provide passive solar heating and daylighting of the structure. This would reduce heating and lighting requirements, but may also increase cooling requirements, depending on the amount of sunlight entering the structure.

- Reusable materials would be separated and recycled to reduce solid waste generation by the project, conserve natural resources, and recover some of the energy embodied in the materials recycled.

- Electrical appliances would be chosen on the basis of energy efficiency to reduce the amount of electricity consumed by installed appliances.

- Operable windows would be installed in each unit for ventilation. This would reduce the amount of mechanical ventilating and cooling required, with a corresponding reduction in energy consumption.

- The project sponsor would install occupant-operable sun control devices on the interiors of windows to reduce solar heat gain, and thus cooling loads, during the cooling season. These would be operable to permit solar heat gain during the heating season.

- Energy efficient flourescent lights would be used where feasible to conserve energy and reduce glare.

- Occupant-controlled light switches and thermostats would be provided in each room to permit individual adjustment of lighting and room air conditioning, ensuring that energy would not be consumed unnecessarily in maintaining occupant comfort.

- Mechanical systems (HVAC and lighting) would be controlled with time clocks to limit the hours of operation. This would reduce energy consumption by eliminating accidental or inappropriate lighting or conditioning of unoccupied space.

- The developer would perform an energy audit of the structure's actual energy use after the first year of occupancy, and implement all cost effective alterations to the structure's energy system identified in the audit. This measure would improve energy efficiency by ensuring that energy efficiency design measures, such as weatherstripping, had not been unknowingly compromised during project construction. It may also detect energy conservation measures overlooked during project design, and would provide an opportunity for implementing innovations in energy efficency that had occurred subsequent to the project's design phase. Results of the audit would be available to the City.

- Heating, ventilating, and air conditioning (HVAC) intake/exhaust vents, in the preliminary HVAC design, would make maximum use of predominant air flows around the building. This measure would reduce back pressure on circulating fans within the system, thus reducing their electricity consumption.

Measures Not Included in the Project

- The developer could design the project with carefully located and sized materials to increase the thermal mass (high-density materials that absorb large amounts of solar radiation and release it to the interior of the structure slowly) and to increase its effectiveness in moderating temperatures within the building. This would decrease peak cooling demands in warm weather by absorbing heat from interior space during the day and radiating it to the exterior at night and would decrease peak heating demand in cool weather by absorbing solar energy during the day and radiating it to interior space at night. All buildings do this to an extent, but so-called "passive solar" buildings are carefully designed to maximize the effect. The sponsor is considering this measure and would decide to accept or reject it based on architectural considerations as interior design details are finalized.

- The developer could equip intake and exhaust ports of the HVAC system with a heat transfer device (heat exchanger) to recover part of the heat from air being rejected from the building in winter and to pre-cool incoming air in summer. The project sponsor has rejected this measure because the efficiency of heat exchangers is proportional to the difference between intake and exhaust air temperature; therefore, the sponsor feels that heat exchangers are not economically viable in a mild climate such as that of San Francisco.

MITIGATION OF SEISMICITY AND HYDROLOGY IMPACTS

Measures Included in the Project

- The project sponsor would post a surety bond, if required by the San Francisco Department of Public Works, before a permit to excavate would be issued. This bond would protect the City against damage to City sidewalks, streets, and utilities.

- The project sponsor would require the contractor and subcontractors to obtain a Faithful Performance and Payment Bond, if proper financial capability is not evident, and to be responsible for any damage to existing buildings that might result from excavation. This bond would ensure that structures on adjacent properties were repaired if these were damaged during construction.

- Since extensive dewatering would be necessary, the City would require a lateral and settlement survey to monitor any movement or settlement of adjacent buildings and streets during the dewatering. Control lines and benchmarks would be established for monitoring horizontal and vertical movement. The contractor would assume costs for the survey and necessary repairs to services under the streets. This measure would result in quick detection of settlement or movement so that corrective measures could be undertaken and damage minimized.

- The project sponsor would have a soils and geotechnical report prepared for the project by a licensed professional engineer, and would follow the recommendations of that report for foundation design and site preparation. This measure would reduce the potential for damage to the project or adjacent structures from undetected geotechnical problems.

- Excavation walls would be shored up and protected from slumping or lateral movement of soils into pits. The contractor would comply with the Excavation Standards of the California Occupational Safety and Health Agency (Department of Industrial Relations). This measure would reduce the potential for injury to construction workers during excavation.

- In order to minimize the hazard of falling glass, the windows would be designed with a 2-ft. setback from the building face, providing a deep sill to catch breakage that falls outward rather then inward.

- If dewatering operations were to require more than a minimal amount of pumping, any groundwater pumped from the site would be retained in a holding tank to allow suspended particles to settle to prevent sediment from entering the sewer system.

MITIGATION OF UTILITIES AND PUBLIC SERVICES IMPACTS

Measures Included in the Project

- Pacific Gas and Electric Company would coordinate work schedules with other utilities requiring trenching so that street disruption would take place during weekends and off-peak hours. This would be done through the San Francisco Committee for Utility Liaison on Construction and other Projects (CULCOP).

- The building would be equipped with a central trash compactor to reduce the volume of solid waste requiring storage and transportation. Separate storage facilities would be provided for recyclable waste material.

MITIGATION OF HAZARDS IMPACTS

Measure Included in the Project

- An excavation and emergency response plan would be developed by the project sponsor in consultation with the Mayor's Office of Emergency Services to ensure coordination between the City's emergency planning activities and the project's plan, and to provide for building occupants in an emergency. The project's plan would be reviewed by the Office of Emergency Services and implemented by building management before a final building permit is issued by the Department of Public Works.

MITIGATION OF CULTURAL IMPACTS

Measure Included in the Project

- Should evidence of cultural or historic artifacts of significance be found during project excavation, the Environmental Review Officer and the President of the Landmarks Preservation Advisory Board would be notified. The project sponsor would select an archaeologist to help the Office of Environmental Review determine the significance of the find and whether feasible measures, including appropriate security measures, should be implemented to preserve or recover such artifacts. The Environmental Review Officer would then recommend specific mitigation measures, if necessary, and recommendations would be sent to the State Office of Historic Preservation. Excavation or construction which might damage the discovered cultural resources would be suspended for a maximum of 4 weeks to permit inspection, recommendation and retrieval, if appropriate.

NOTE - Mitigation Measures

/1/ Some measure included in the Initial Study have subsequently been determined to be required by law. These measures are therefore not considered mitigation measures. and have been taken into account in analyzing the proposed hotel's impacts.

VI. SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROJECT IS IMPLEMENTED

In accordance with Section 21067 0f the California Environmental Quality Act (CEQA), and with Sections 15040, 15081, and 15082 of the State EIR guidelines, the purpose of this chapter is to identify impacts that could not be eliminated or reduced to an insignificant level by mitigation measures included as part of the proposed project, or by other mitigation measures that could be implemented, as described in Chapter V, Mitigation Measures, pp. 85 to 91.

Based on the information presented in Chapters IV and V, this project would not have any unavoidable significant effects.

A discussion of alternatives to the project is required by CEQA (State EIR Guidelines, Section 15143 (d)). These alternatives must include the "no project" alternative.

According to the State EIR Guidelines, alternatives other than the required "no project" alternative should be those that "could feasibly attain the basic objectives of the project," although not necessarily as quickly or as economically as the proposed project. Alternatives should be environmentally superior, eliminating or substantially reducing one or more significant adverse environmental effects of the project.

Several alternatives to the project as proposed are described and compared below. All of these alternatives (except Alternative A) contemplate development at the same location as the proposed project.

Alternative A - No Project

This alternative would entail no change to the site. The existing parking structure on Lot 4 would be retained. This alternative would not displace the 2 uses on Lot 4, the parking garage and the car rental agency. The No Project alternative would preserve options for future site development.

In general, the effects of this alternative on wind, shadows, traffic, air quality, and noise would be as described in the Environmental Setting of this report (see Chapter III, pp. 20 to 38). Transportation, air quality, and noise levels described as baseline conditions with cumulative development (see Chapter IV, pp. 39 to 84), but without the project, would exist in the site vicinity. The City of San Francisco would not realize any increases in revenues from the site. No visual impacts in the vicinity of the Post/Mason Sts. intersection would result. The unused available FAR of the adjacent Olympic Club would continue to be an incentive for future development of Lot 4 (the hotel site) or demolition of the Olympic Club and development of both Lots 4 and 5 (the entire project site).

The project sponsor has rejected this alternative because it would not fulfill the sponsor's goals of providing a luxury hotel in the site, and because it is an economic underuse of the

site. Additionally, since the site would retain unused development rights, the sponsor feels this alternative would not ensure the preservation of the Olympic Club building.

Alternative B - Guiding Downtown Development Alternative

This alternative would conform to suggested controls described in Guiding Downtown Development, a study prepared by the staff of the Department of City Planning in May, 1981, and revised in July, 1982. GDD contains regulatory proposals for managing development in downtown San Francisco; these proposals would affect the size, design, use, and location of major buildings. GDD proposes changes in the City Planning Code regulations for the C-3 Planning Code Use Districts pertaining to housing, transportation, open space, and historic preservation.

GDD would reduce the allowable base FAR for the site to 8.0:1 and would reduce the height limit to 100 ft. (see Figure 24, p. 95). This alternative would have a maximum height of 100 ft. (excluding a rooftop mechanical penthouse) and plan dimensions of 137 ft. The alternative would have 9 floors including ground level, with a total floor area of 154,000 sq. ft., about half of the project's floor area. This alternative would have a total FAR of about 6.9:1, compared to the project's total FAR of 10.7:1. As in the proposed project, the site in this alternative would include the Olympic Club. The GDD alternative would have no ballroom, but would have a central atrium similar to that of the project. The alternative would have about 150 guest rooms, about 200 fewer than the project, and would employ about 150 persons, about 170 fewer than the project.

GDD recommends that publicly accessible ground-level artwork be required in new development, equal in value to 1% of construction costs. GDD also makes provision for open space and recreational area in new development; the GDD alternative would provide the required 4,470 sq. ft. of open space on an 8th floor observation deck.

The GDD alternative would have 3 subsurface levels containing hotel service areas and about 100 parking spaces. To conform to GDD, 75 of these parking spaces would be designated short-term (used for less than 4 hours at a time); these would be available to Olympic Club patrons and guests. The remaining parking spaces would be designated long-term, exclusively for hotel use, and would be subject to conditional use approval. This alternative would provide 1 off-street loading dock. Under GDD's "transit first" downtown access policy, the project sponsor would contribute funds for maintaining

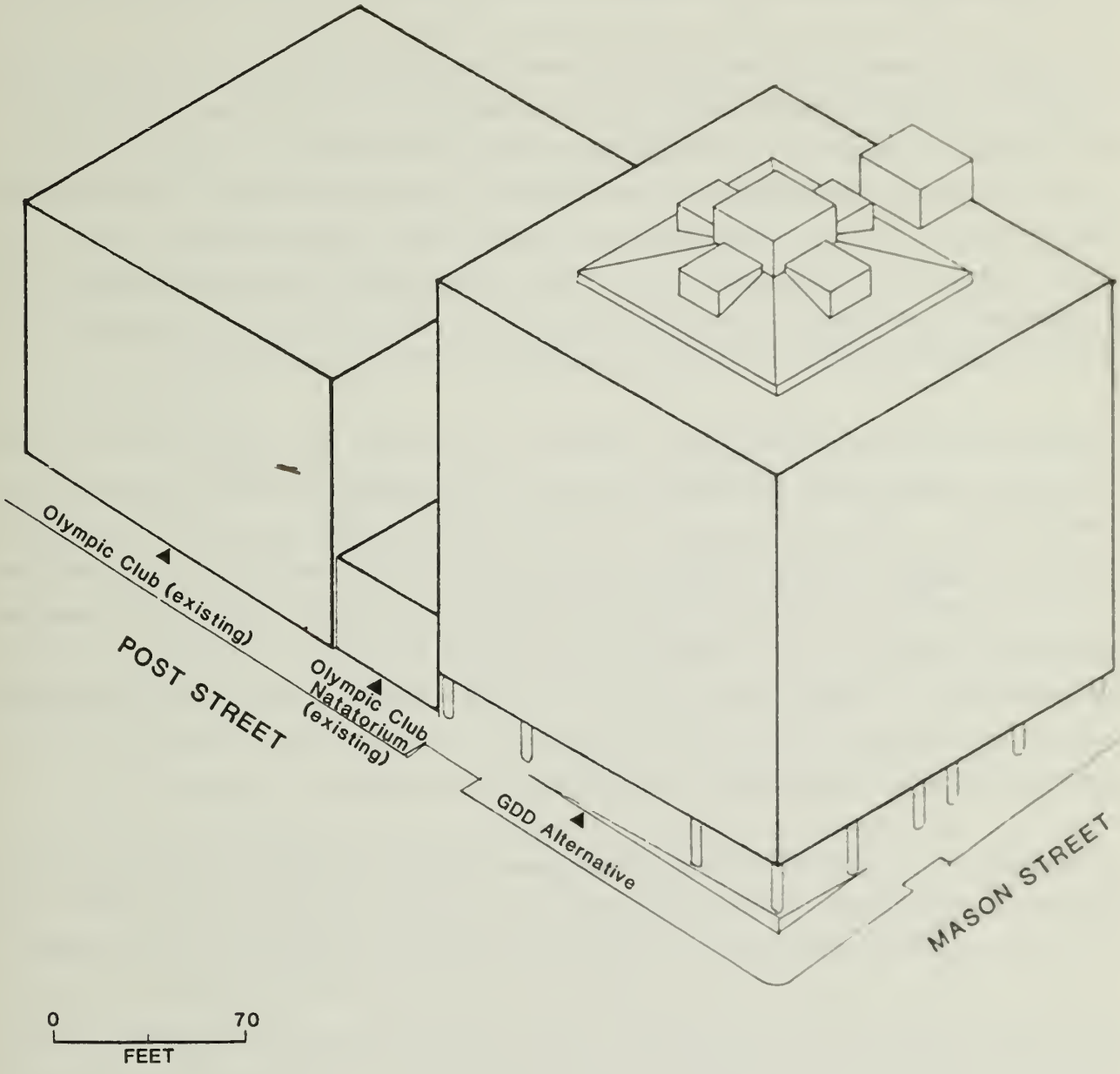


FIGURE 24: Guiding Downtown Development Alternative

SOURCE: John Portman & Associates

and augmenting public transportation in an amount proportional to the demand created by this alternative. The sponsor would also provide safe and secure bicycle parking, subject to the approval of the Bureau of Traffic Engineering of the Department of Public Works.

The GDD alternative would modify wind patterns in the project vicinity, but generally the changes would be less marked than those that would result from the project. Compared to the setting, this alternative would slightly increase wind speed ratios during west winds at the Sutter/Mason St. intersection and along Post St. adjacent to the site. This alternative would create only minor changes in wind speed ratios during northwest winds. For southwest winds, the GDD alternative would increase surface wind speed ratios at the Post/Mason St. intersection by about 38% over those described in the setting, and would decrease wind speed ratios along Mason St. adjacent to the site by about 33%.

Because of its lower overall height compared to the project, the GDD alternative would not block existing views from upper floors of the Marines Memorial building or the Medico-Dental building, nor would it be the visually dominant feature of the project block. The GDD alternative would provide less permanent employment and less tax revenues to the City than the project. Transportation and air quality impacts would be reduced in proportion to the lesser floor area of the alternative, as compared with the proposed project. Construction would be completed within 18 to 24 months. Dewatering impacts would not be as great as for the project, since the alternative would have 2 fewer subsurface levels. Energy consumption would also be reduced.

The sponsor has rejected this alternative because the sponsor believes it would be out of context in architectural scale and economically unfeasible. In the sponsor's opinion, the GDD alternative would not relate to larger-scale buildings north and east of the site, nor would it provide a smooth height transition between these larger buildings and smaller structures to the west and south. Even at very high luxury hotel room rates, the sponsor does not feel that this alternative would provide sufficient economic return to offset land leasing, and hotel construction and operation costs. Finally, the sponsor feels that without amenities such as an atrium in this alternative, the hotel would not project the aesthetic atmosphere required by the intended clientele and would result in lower average rates for rooms.

Alternative C - Code Conformance Alternative

This alternative would be a 20-story hotel instead of the 21 stories proposed in the project, about 255 ft. tall, and similar in design to the project. The total gross floor area of this alternative would be 287,000 sq. ft., resulting in a FAR of about 10.0:1 for the site. No floor area bonuses would be requested. This alternative would contain about 330 guest rooms, about 20 fewer than the proposed project. Like the project, it would have a ballroom and mezzanine below the guest levels. Unlike the project, this alternative would have street-level retail space along Mason St. and along part of Post St. Otherwise, the Code Alternative's interior and exterior design would be identical to that of the project, except that the alternative would be about 5 ft. shorter: the average floor-to-floor height would be about 1/2 ft. greater, and the alternative would have no observation deck (see Figure 25, p. 98).

To conform to Section 204.5(c) of the Code, this alternative would have only about 20,100 sq. ft. of off-street parking area in the subsurface levels, which would accommodate about 75 vehicles. This would be about 54,000 sq. ft. and 65 parking spaces less than the project. As in the project, this alternative would have two 12'x35' off-street enclosed loading stalls on Mason St., to comply with Section 152 of the Code and with City Planning Commission Resolution No. 9286.

Off-street automobile access to this alternative would be restricted to the drive leading down to the parking garage, because of the retail space at street level. The drive would accommodate about 2 cars unloading simultaneously: additional vehicles would queue up and could block the sidewalk and possibly interfere with the flow of traffic on Post St. Loading and unloading of hotel guests on Mason St. would be from the curb lane.

Land use effects of this alternative, other than the reduced parking and guest-room area, would be the same as for the project. Urban design and shadow effects of this alternative would be slightly less than those of the proposed project because of the decreased building height. At a height of 255 ft., however, the hotel would still be taller than the adjacent Marines Memorial building and the Medico-Dental building across the street, and would thus be a visually dominant feature in the site vicinity. Pedestrian-level views along Post and Mason Sts. would be similar to those of the proposed project, with glass and metal canopies providing scale as well as shelter.

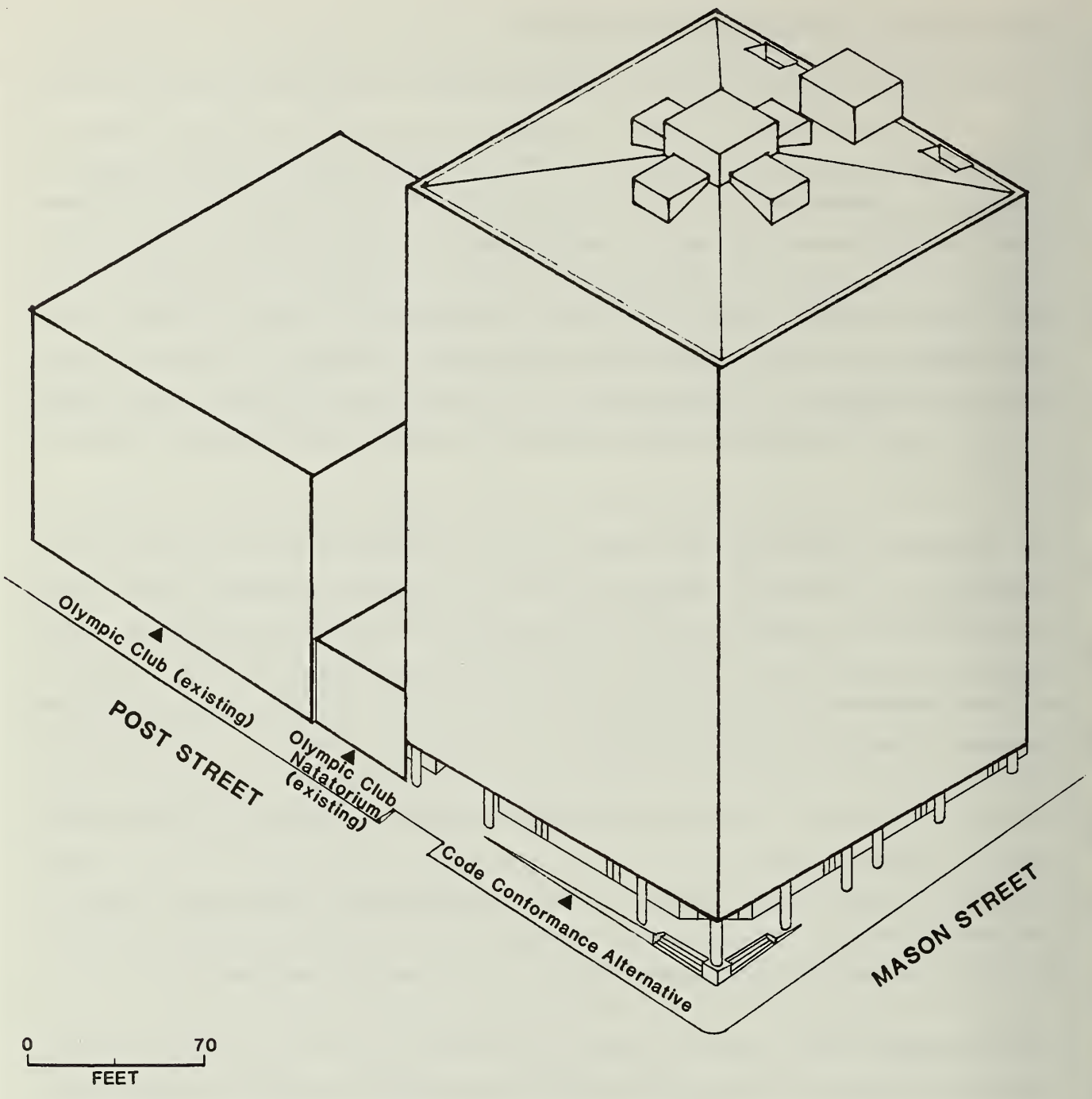


FIGURE 25: Code Conformance Alternative

SOURCE: John Portman & Associates

As in the project, this alternative would entail demolition of the parking garage currently on the site. Noise and air quality impacts associated with building construction would generally be as described in Chapters IV.D and IV.E, pp. 61 to 68. Compared to the project, the Code Alternative would have a slightly shorter construction period and decreased dewatering impacts due to its lower height and reduced excavation requirements (for parking). This alternative would consume slightly less natural gas and electricity than the proposed project, both during construction and hotel operation.

Total parking demand created by this alternative would be about 75 spaces. Since the alternative would reduce on-site parking from about 200 to about 75 spaces, its net effect on parking would be to create a deficit of approximately 200 spaces. The alternative would generate about 80 p.m. peak hour vehicle trip ends, of which 40 to 45 would represent new travel to the site. These new trip ends would be expected to come, for the most part, from drop off and taxi trips. This Alternative's contribution to peak-hour Muni ridership would be similar to that of the project.

The sponsor has rejected this alternative because, with fewer guest rooms than in the project, the sponsor believes that the higher room rates necessary to achieve sufficient return on the original investment would make the hotel uncompetitive. In the sponsor's opinion, inclusion of street level retail and reduced street-level vehicle access would require curbside and on-street loading and unloading of buses, and off-street space for loading and unloading of other vehicles would be insufficient. Furthermore, the sponsor feels that this alternative's 75 parking spaces would be inadequate to meet Olympic Club and hotel parking requirements.

Alternative D - Residential Alternative

This alternative would be a 150-unit apartment complex, with each unit rented at market-rate prices. Because of ground lease arrangements for the building site, dwellings could be offered only on a lease or rental basis. The height and gross floor area of this alternative would be the same as for the proposed project, but the structure would be rectangular, rather than square, to accommodate a rear yard (see Figure 26, p. 100). This alternative would have no atrium, nor would it have ballroom and mezzanine levels as proposed for the project. As in the project, this alternative would have 5 subsurface parking levels providing 140 parking stalls. Pedestrian entrances would be located on both Post and Mason Sts.

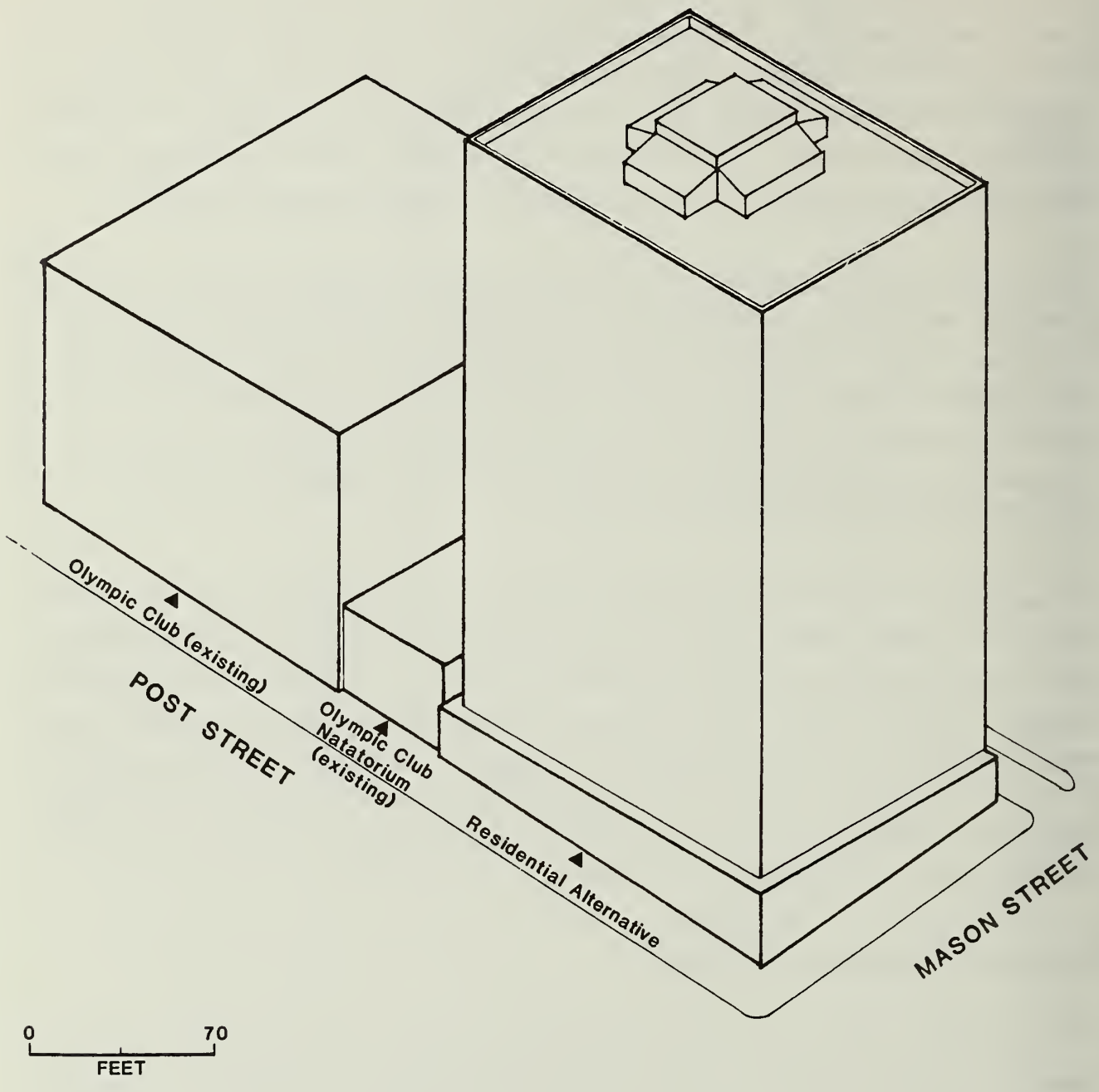


FIGURE 26: Residential Alternative

SOURCE: John Portman & Associates

Apartment units would be 1 and 2-bedroom, located on the 2nd to the 21st level. Average size of these units would be about 1,350 sq. ft. This alternative would conform to the Planning Code requirement for a rear yard by providing a yard 35 ft. in depth between the building and the adjacent Marines Memorial building. It would comply with the Planning Code requirement for open space by providing an 8,000 sq.-ft. rooftop garden and observation deck as common usable open space. The ground floor would have a lobby and approximately 5,800 sq. ft. of retail use, and would provide residents' access to the rear yard. The parking garage would be private, with some stalls being assigned to residents and some reserved for Olympic Club members. As in the proposed project, this alternative would require a Conditional Use authorization for parking area beyond that allowed as an accessory use and for floor area bonuses in order to raise the allowable site FAR from 10.0:1 to 10.7:1.

Other than temporary construction labor, the Residential Alternative would provide very little permanent employment. Twenty-four hour security and apartment management would employ 10 to 15 people, or up to 5% of the employment that would result from the proposed project. The alternative would cause a net decrease in housing demand in the City of San Francisco. Since it would not be subject to the hotel and parking taxes, Alternative D would generate less revenues for the City and County of San Francisco than the project. Property taxes would also be less than for the project, because the combined market value of the apartment units would be less than the project's estimated $60 million.

Assuming that apartment residents would choose the site location due to its proximity to Union Square and Downtown business and recreational activities, private vehicle trip ends would be limited, although still greater than those the proposed project would generate. Some of the residents would use public transit to commute to and from work, which would result in approximately 50 more peak-hour trips on Muni than would result from the project. In demolishing the existing public parking garage, and by limiting the new parking stalls to residents and Olympic Club members, this alternative would create a net parking deficit of 200 spaces.

Wind and shadow impacts of this alternative would be similar to those of the proposed hotel. The rear yard and reduced building bulk on the north/south axis would cause the structure to appear less massive from street level. Air quality and noise impacts during

construction would be similar to those of the proposed project, as the alternative would require demolition of the existing parking garage and would have a 24 to 30 month construction period. Total energy consumption for this alternative would be slightly lower than for the proposed project, due to the smaller building envelope.

The sponsor has rejected this alternative because the sponsor feels that residential units would be an inappropriate use on the project site. In order to assure a fair return on the original investment, the sponsor believes that rents would be well above competitive levels for apartments in this size range. Finally, the sponsor has experience in hotel, retail, and office development, but is not a residential developer.

Alternative E - Reduced Bulk Alternative

This alternative would be a 20-story hotel, instead of the proposed 21 stories, and would be about 250 ft. tall. The hotel would have a 10-ft. stepback from Post St. above the mezzanine, and two 14-ft. stepbacks above the 8th and 14th guest levels, respectively (see Figure 27, p. 103). Other configurations would also be possible, such as a straight tower or a lower building without stepbacks or with stepbacks only above the Olympic Club roofline. This alternative would contain about 306,000 sq. ft., resulting in an FAR of about 10.3:1 for the site. Some floor area bonuses would be requested. The hotel would have about 330 guest rooms, 20 fewer than in the project. Like the project, it would have a ballroom, lobby level, and mezzanine below the guest levels. Unlike the project, it would have neither an interior atrium, nor an observation deck.

As in the proposed hotel, the Reduced Bulk alternative would accommodate about 140 cars in a 5-level subsurface parking garage. The hotel would have 2 off-street loading stalls on Mason St., in compliance with Section 152 of the Code and with City Planning Commission Resolution No. 9286.

Despite this alternative's stepbacks and reduced bulk, it would be a visually dominant feature in the site vicinity. The alternative would be taller than the adjacent Marines Memorial building and the Medico-Dental building across Mason St. The alternative's reduced bulk would be most apparent when viewed from the east or west, since the stepbacks would narrow the width of the building from 137 ft. to 99 ft. on the Mason St. frontage. Between about 11 a.m. and 1 p.m., there would be a slight reduction of shadows

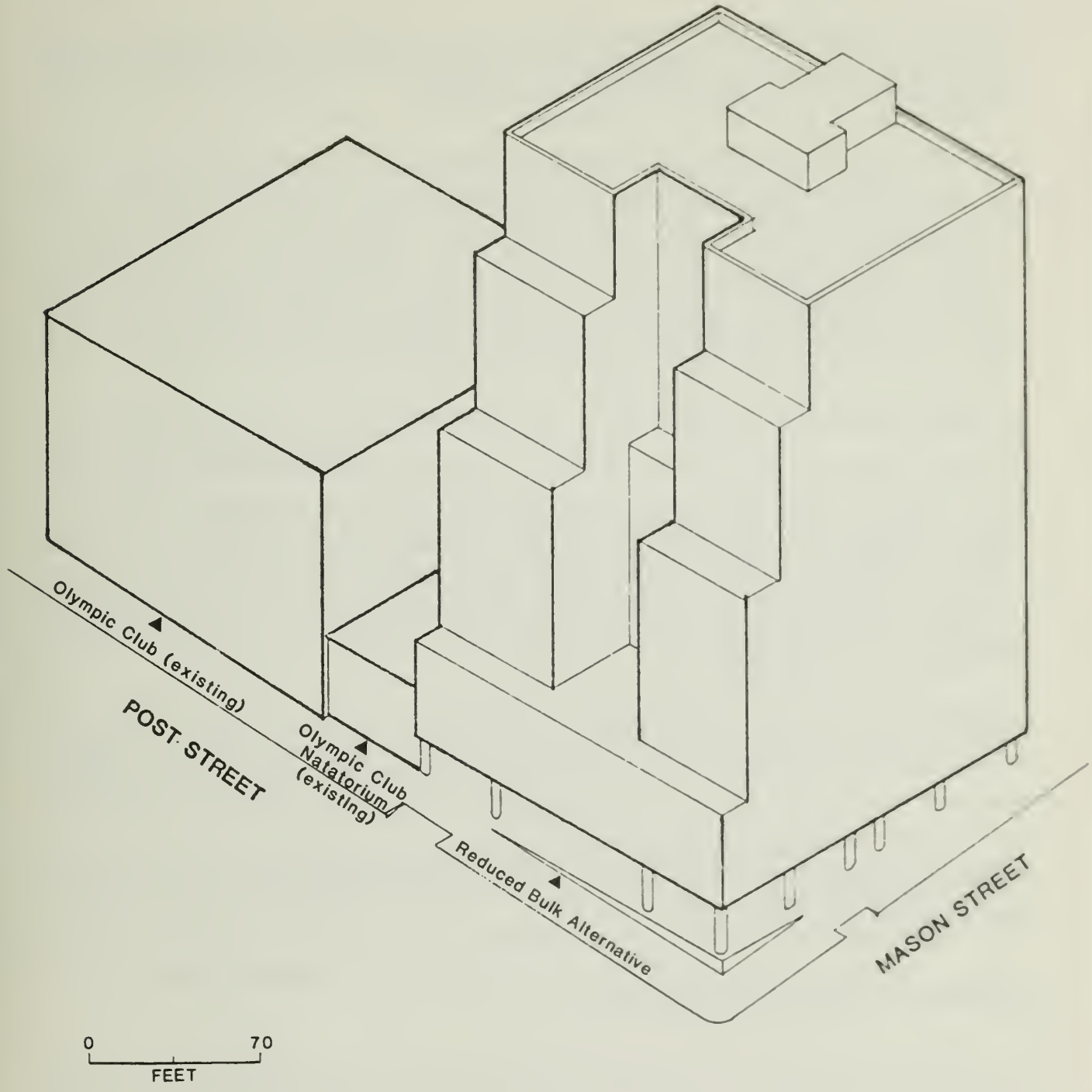


FIGURE 27: Reduced Bulk Alternative

SOURCE: John Portman & Associates

cast by this alternative on Sutter and Mason Sts., as compared with the project. The Reduced Bulk alternative would, like the proposed project, provide glass and metal canopies along Post and Mason Sts. for scale and shelter.

As in the project, this alternative would entail demolition of the parking garage on the site. Noise and air quality impacts associated with building construction would generally be as described in Chapters IV.D and IV.E, p. 61 to 67. This alternative would be expected to consume slightly less natural gas than the project, and would consume about the same amount of electricity; the alternative would have a smaller area to illuminate, but there would be no natural lighting from the atrium as in the project.

The project sponsor has rejected this alternative because, in the sponsor's opinion, this alternative offers few benefits and has several drawbacks over the proposed project. The sponsor feels that stepbacks would be inconsistent with the full-height facades and cornice treatment of nearby buildings, and that the dissimilarity between the Post and Mason St. elevations would be a disruptive, rather than unifying, visual characteristic. The eroded form would diminish the contextural coherency set by the surrounding decorative facade treatments.

Additionally, with fewer guest rooms and less amenities than the project, the sponsor believes that the higher room rates necessary to achieve sufficient return on the original investment would make the hotel uncompetitive. The sponsor believes that, without an atrium (which would be incompatible with the reduced bulk design), the hotel would not project the aesthetic atmosphere required by the intended clientele and would result in lower average rates for rooms.

Alternative F - Full Parking Alternative

This alternative would be a hotel similar in all respects to the proposed project, except that it would provide the full number of off-street parking spaces (200) currently on the building site. Since the additional parking area would be built underground, this alternative would have the same appearance from street level as the proposed hotel.

In order to accommodate 200 vehicles, this alternative would have 7 subsurface parking levels, 2 more than are proposed in the project. Excavation to approximately 90 ft. below the ground surface would be required. This depth is 40 to 50 ft. below the groundwater level; such excavation would require substantial dewatering. The possibility of subsidence would be greater than with the proposed project and could occur over a larger area. If subsidence were to occur, nearby building floors and walls could tilt and crack, and depressions could develop on Post and Mason Sts. Without strong lateral and vertical support from soldier piles, the excavation walls would have a tendency to collapse. Measures to mitigate potential dewatering impacts are identified in Chapter V, pp. 89 to 90. Additionally, the excavation would encounter bedrock of the Franciscan Formation. This would lengthen the excavation period and substantially increase noise emissions compared to the proposed hotel.

As with the project, the full-parking alternative would require a Conditional Use authorization for parking area beyond that allowed as an accessory use. Eighty of the 200 parking spaces would be reserved for hotel use, and the remaining spaces would be available to Olympic Club members and to the public. This would result in a parking deficit of approximately 80 spaces over the existing supply, compared to a deficit of approximately 140 spaces for the proposed hotel. Parking tax revenues to the City would be higher with this alternative than with the project. Other impacts of Alternative F would be similar to those of the proposed hotel.

The sponsor has rejected this alternative because of geotechnical constraints and cost. The sponsor feels that the risk of damage to surrounding property during dewatering, the possibility of encountering bedrock, and the greater than proportional construction cost for the 2 additional subsurface levels combine to make this alternative unfeasible.

VIII. EIR AUTHORS AND CONSULTANTS; ORGANIZATIONS AND PERSONS CONSULTED

EIR AUTHORS

San Francisco Department of City Planning
Office of Environmental Review
450 McAllister St., Fifth Floor
San Francisco, California

Environmental Review Officer: Alec Bash
Assistant Environmental Review Officer: Barbara Sahm
EIR Coordinator: Paul Rosetter

EIR CONSULTANTS

Environmental Science Associates, Inc.
1390 Market Street, Suite 215
San Francisco, California 94102

(Prime Consultant: Project Description, Land Use and Zoning, Urban Design, Employment, Housing and Fiscal Factors, Transportation, Air Quality, Noise, Energy, Community Services and Utilities, Land (topography, soils, geology), Cultural, Mitigation Measures, and Alternatives to the Proposed Project.)

Associate-in-Charge:	Chuck Bennett
Project Manager:	Bruce Campbell
Deputy Project Manager:	Gilbert Wistar

Bruce White, Ph.D.
University of California, Davis
2053 Bainer Hall, Davis, California
(Micro-Climate Studies)

ORGANIZATIONS AND PERSONS CONSULTED

PROJECT SPONSOR

Portman Properties
225 Peachtree Street, N.E., Suite 201
Atlanta, Georgia

PROJECT ARCHITECTS, ENGINEERS, AND MARKET CONSULTANTS

John Portman and Associates
225 Peachtree Street, N.E., Suite 201
Atlanta, Georgia

Pannell Kerr Forster
425 California St.
San Francisco, California

Harding Lawson Associates
666 Howard St.
San Francisco, California

CITY AND COUNTY OF SAN FRANCISCO

Department of City Planning
450 McAllister Street
San Francisco, California
Dean Macris
Lu Blazej
Richard Hedman
Gail Bloom
Paul Rosetter

Department of Public Works
Bureau of Traffic Engineering
460 McAllister Street
San Francisco, California
Nelson Wong

Mayor's Office of Emergency Services
814 Mission Street
San Francisco, California
Thomas Jenkins, Architect

San Francisco Municipal Railway
949 Presidio Avenue
San Francisco, California
Bruce Bernhard, Chief Accountant

OTHER ORGANIZATIONS

Northwest Information Center
Department of Anthropology
Sonoma State University
Sonoma, California

Olympic Club
524 Post Street
San Francisco, California
Tom Marquoit, General Manager

Bay Area Rapid Transit District
800 Madison Street
Oakland, California
Ward Belding, Senior Economic Analyst

San Francisco Convention and Visitors Bureau
201 Third St.
San Francisco, California
Dale Hess, General Manager

REGIONAL AGENCIES

Association of Bay Area Governments
Hotel Claremont
Berkeley, California 94705

Bay Area Air Quality
Management District
939 Ellis Street
San Francisco, California 94109
Attention: Irwin Mussen

Bay Area Rapid Transit District
800 Madison Street
Oakland, California 94607

California Archaeological Survey
Northwest Information Center
Department of Anthropology
Sonoma State University
Rohnert Park, California 94928

Golden Gate Bridge Highway
and Transportation District
P.O. Box 9000, Presidio Station
San Francisco, California 94129

Metropolitan Transportation Commission
Hotel Claremont
Berkeley, California 94705

San Francisco Bay Transportation
Terminal Authority
P.O. Box 3366, Rincon Annex
San Francisco, California 94119
Attention: Herb Okubo

San Mateo County Transit District
400 South El Camino
San Mateo, California 94402

Alameda-Contra Costa Transit District
508 - 16th Street
Oakland, California 94612

CITY AND COUNTY OF SAN FRANCISCO

City Planning Commission
450 McAllister Street
San Francisco, California 94102
Attention:
Toby Rosenblatt, President
Roger Boas
Susan Bierman
Norman Karasick, Alternate
Eugene Kelleher, Alternate
Jerome Klein
Yoshio Nakashima
C. Mackey Salazar
Rudy Nothenberg
Lee Woods, Commission Secretary

San Francisco Landmarks Preservation
Advisory Board
450 McAllister Street
San Francisco, California 94102
Attention:
Patrick McGrew, President
Phillip P. Choy
David M. Hartley
Carolyn Klemeyer
Jean E. Kortum
Elizabeth de Losada
John Ritchie
Ann Sabiniano
Walter Sontheimer
Jonathan Malone, Secretary

San Francisco Water Department
Distribution Division
425 Mason Street
San Francisco, California 94102
Attention: George Nakagaki, Manager

San Francisco Fire Department
260 Golden Gate Avenue
San Francisco, California 94102
Attention: Edward Phipps, Chief
of Support Services

San Francisco Police Department
Planning and Research Division
850 Bryant Street
San Francisco, California 94103
Attention: Sgt. Paul Libert

San Francisco Department of
Public Works
Traffic Engineering Division
460 McAllister Street
San Francisco, California 94102
Attention: Scott Shoaf

San Francisco Bureau of
Building Inspection
450 McAllister Street
San Francisco, California 94102
Attention: Robert Levy, Superintendent

San Francisco Department of
Public Works
Mechanical Section
45 Hyde Street, #222
San Francisco, California 94102
Attention: Ray G. Danehy

MUNI Planning Division
949 Presidio Avenue, #204
San Francisco, California 94115
Attention: Peter Straus

San Francisco Committee for
Utility Liaison on Construction
and Other Projects (CULCOP)
c/o GES - Utility Liaison
City Hall, Room 363
San Francisco, California 94102
Attention: Joseph Carollo

Mayor's Economic Development Council
480 McAllister Street
San Francisco, California 94102
Attention: Richard Goblirsch

San Francisco Public Utilities
Commission
949 Presidio Avenue, Room 111
San Francisco, California 94115
Attention: Barbara Moy, Director

San Francisco Public Utilities
Commission
City Hall, Room 287
San Francisco, California 94102
Attention: Rudy Nothenberg

San Francisco Real Estate Department
450 McAllister Street, Room 600
San Francisco, California 94102
Attention: Wallace Wortman
Director of Property

GROUPS & INDIVIDUALS

American Institute of Architects
Northern California Chapter
790 Market Street
San Francisco, California 94102

Bay Area Council
348 World Trade Center
San Francisco, California 94111

Bendix Environmental Research, Inc.
1390 Market St., Suite 902
San Francisco, California 94102

Peter Bosselman
Environmental Simulation Laboratories
316 University
University of California
Berkeley, California 94704

Brobeck, Phleger, Harrison
One Market Plaza
San Francisco, California 94105
Attention: Michael J. Rushman, Esq.

Building Owners and Managers
Association
690 Market Street
San Francisco, California 94104
Attention: Elmer Johnson

Building Service Employees Union
Local 87
240 Golden Gate Avenue
San Francisco, California 94102

Charles Hall Page and Associates
364 Bush Street
San Francisco, California 94104

David Caprone
Lincoln Property Company
220 Sansome Street
San Francisco, California 94104

Joseph Coriz
2853 22nd Street
San Francisco, California 94110

Calum Dare
Cushman Wakefield
555 California, Suite 2700
San Francisco, California 94104

Downtown Senior Social Services
295 Eddy Street
San Francisco, California 94102

Downtown Association
582 Market Street
San Francisco, California 94104
Attention: Lloyd Pflueger, Mgr.

Economic Opportunity Center
District Council V
1173 Mission Street
San Francisco, California 94103
Attn: Lee Meyerzove, Chairman

Environmental Impact Planning Corp.
319 Eleventh Street
San Francisco, California 94103

Marines Memorial Theatre
609 Sutter Street
San Francisco, California, 94102
Attention: Bill Bunting, General Manager

The Foundation for San Francisco's
Architectural Heritage
2007 Franklin Street
San Francisco, California 94109
Attention: Grant Dehart
Executive Director

Friends of the Earth
124 Spear Street
San Francisco, California 94105
Attention: Connie Parrish

Charles Gill
315 Ivy St.
San Francisco, Ca 94102

Gray Panthers
944 Market Street
San Francisco, California 94102
Attention: W. Nunnally

Gruen Gruen & Associates
564 Howard Street
San Francisco, California 94105
Attention: Carrie George

Heller, Ehrman, White & McAuliffe
44 Montgomery Street, 32nd Floor
San Francisco, California 94104
Attention: Robert L. Gibney, Jr.

Sue Hestor
4536 - 20th Street
San Francisco, California 94114

Carl Imparato
1205 Garfield
Albany, California 94705

David Jones
241 Bartlett
San Francisco, California 94110

Paula Lamb
822 Masonic Ave.
San Francisco, California 94117

Chris Lavdiotis
1919 28th Avenue
San Francisco, California 94116

League of Women Voters
12 Geary Street, Room 605
San Francisco, California 94108

Legal Assistance to the Elderly
944 Market Street, #803
San Francisco, California 94102

North of Market Planning Coalition
295 Eddy Street
San Francisco, California 94102

Robert Meyers Associates
5826 Balboa Drive
Oakland, California 94611

Mr. Gerald Owyang
1517 Reed Avenue, #2
San Diego, California 94118

Kay Patchner
Consumer Action
1417 Irving St.
San Francisco, California 94122

Planning Analysis and Development
530 Chestnut
San Francisco, California 94133
Attention: Gloria Root

David Rhodes
44 Montgomery St., Suite 457
San Francisco, California 94104

San Francisco Beautiful
41 Sutter Street
San Francisco, California 94104
Attn: Mrs. H. Klussman, President

San Francisco Building and
Construction Trades Council
400 Alabama Street, Room 100
San Francisco, California 94110
Attention: Stanley Smith

San Francisco Chamber of
Commerce
465 California Street
San Francisco, California 94102
Attention: Richard Morten

San Francisco Ecology Center
13 Columbus Avenue
San Francisco, California 94111

San Francisco Junior Chamber of
Commerce
251 Kearny St.
San Francisco, California 94101

San Francisco Labor Council
3068 - 16th Street
San Francisco, California 94103
Attention: Bernard Speckman

San Francisco Planning and Urban
Research Association
312 Sutter Street
San Francisco, California 94108

San Francisco Convention and
Visitors Bureau
1390 Market Street, Suite 260
San Francisco, California 94102
Attn: R. Sullivan, Manager

San Francisco Downtown Market Street
Improvement Association
17 Drumm Street
San Francisco, California 94111
Attention: Ralph Leon Isaacs

San Francisco Forward
690 Market Street
San Francisco, California 94104
Attention: Frank Noto

San Francisco Tomorrow
88 First Street, Room 600
San Francisco, California 94105

San Franciscans for Reasonable
Growth
88 First Street, Room 600
San Francisco, California 94105

San Francisco Retail Merchants
Association
582 Market Street, Suite 1001
San Francisco, California 94104

John Sanger & Associates
2340 Market Street
San Francisco, California 94114

Senior Escort Program
South of Market Branch
814 Mission Street
San Francisco, California 94103
Attention: Leslie Halford
Neighborhood Coordinator

Kent E. Soule
1180 Filbert Street, #204
San Francisco, California 94109

Paul Thayer
1033 Stanyan Street
San Francisco, California 94117

Timothy A. Tosta
333 Market Street, Suite 2230
San Francisco, California 94105

Steven Weiker
899 Pine Street, #1610
San Francisco, California 94108

Jeff Vance
Campeau Corp. of Calif.
681 Market Street
San Francisco, California 94105

Mrs. G. Bland Platt
339 Walnut Street
San Francisco, California 94118

Sierra Club
530 Bush Street
San Francisco, California 94105
Attention: Becky Evans

Tenants and Owners Development Corporation
177 Jessie Street
San Francisco, California 94105
Attention: John Elberling

NEIGHBORING PROPERTY OWNERS

R.S. Cathcart
650 California Street, #2828
San Francisco, California 94108

Istvan Viragh
536 Mason Street
San Francisco, California 94102

Marines Memorial Assoc.
609 Sutter Street
San Francisco, California 94102

Bohemian Club
624 Taylor Street
San Francisco, California 94102

Ellen Hindes Bruck
1000 Mason Street, #601
San Francisco, California 94108

655 Sutter Associates
525 University Avenue
Palo Alto, California 94301

C. Dan Lange
351 California Street, #1008
San Francisco, California 94104

Richard A. Stephens
627 Sutter Street
San Francisco, California 94102

Clarence E. Musto, Jr.
535 North Point Street
San Francisco, California 94133

Press & Union League Club
555 Post Street
San Francisco, California 94102

Frances P. Lyons
1170 Sacramento Street
San Francisco, California 94108

The Pacific Lumber Company
c/o President
POB 7406
Rincon Annex
San Francisco, California 94108

First Congregation Society
491 Post Street
San Francisco, California 94102

Board of Equalization
350 McAllister Street
San Francisco, California 94102

MEDIA

San Francisco Bay Guardian
2700 19th Street
San Francisco, California 94110
Attn: Patrick Douglas, City Editor

San Francisco Chronicle
925 Mission Street
San Francisco, California 94103
Attention: Marshall Kilduff

San Francisco Examiner
110 5th Street
San Francisco, California 94103
Attention: Gerald Adams

San Francisco Progress
851 Howard Street
San Francisco, California 94103

The Sun Reporter
1366 Turk Street
San Francisco, California 94115

LIBRARIES

EPA Library
215 Fremont Street
San Francisco, California 94105
Attention: Jean Circiello

Government Documents Section
Stanford University Library
Stanford, California 94305

Government Publications Dept.
San Francisco State University
1630 Holloway Avenue
San Francisco, California 94132

Hastings College of the Law - Library
198 McAllister Street
San Francisco, California 94102

Institute of Government Studies
1209 Moses Hall
University of California
Berkeley, California 94720

Golden Gate University Library
550 Mission Street
San Francisco, California 94105

City College of San Francisco
Downtown Center
Fourth and Mission Streets
San Francisco, California 94103

San Francisco, Public Library (2c)
Documents Department
200 Larkin Street
San Francisco, California 94102
Attention: Faith Van Liere

University of San Francisco
Gleeson Library
Golden Gate and Parker Avenue
San Francisco, California 94115

LIST OF APPENDICES

		Page
A.	Final Initial Study	115
B.	Wind Tunnel Study of the Olympic Club Hotel Building	148
C.	Architectural Evaluation Systems	163
D.	Cumulative Traffic Analysis	165
E.	Air Quality Summary	178
F.	Fundamental Acoustical Concepts	179
G.	Seismic Zonation Maps	183

APPENDIX A

FINAL INITIAL STUDY/a/

POST/MASON HOTEL/b/

San Francisco

81.400E

March 1982

/a/ Differences among data presented in the following Initial Study and the preceeding EIR are attributable to changes in project design and to the availability of additional and more precise data during the subsequent preparation of the EIR.

/b/ The project was originally called OLYMPIC CLUB HOTEL; the project name was changed to POST/MASON HOTEL after the Initial Study was prepared.

SAN FRANCISCO DEPARTMENT OF CITY PLANNING 100 LARKIN STREET · SAN FRANCISCO, CALIFORNIA 94102
(415) 552-1134

NOTICE THAT AN
ENVIRONMENTAL IMPACT REPORT
IS DETERMINED TO BE REQUIRED

Date of this Notice: March 12, 1982

Lead Agency: City and County of San Francisco, Department of City Planning
100 Larkin Street, San Francisco, CA. 94102

Agency Contact Person: Sally E. Maxwell, Susana Montaña Tel: (415) 552-1134

Project Title: 81.400E: Olympic Club Hotel

Project Sponsor: Portman Properties

Project Contact Person: Stanley Steinberg, Glenn Isaacson

Project Address: 500-524 Post Street

Assessor's Block(s) and Lot(s): Lots 4 and 5 in A/B 297

City and County: San Francisco

Project Description: Construct a 293,500 square foot, 24 story, 374 guest room hotel with 202 parking spaces after demolishing a three-level parking garage; requiring Conditional Use authorization, Discretionary Review, and possibly a Zoning Map change to exceed the height limit.

THIS PROJECT MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT AND AN ENVIRONMENTAL IMPACT REPORT IS REQUIRED. This determination is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15081 (Determining Significant Effect), 15082 (Mandatory Findings of Significance) and 15084 (Decision to Prepare an EIR), and the following reasons, as documented in the Initial Evaluation (initial study) for the project, which is attached:

Deadline for Filing of an Appeal of this Determination to the City Planning Commission: March 22, 1982.

An appeal requires 1) a letter specifying the grounds for the appeal, and 2) a $ 35.00 filing fee.

Alec S. Bash

Alec S. Bash, Environmental Review Officer

ER5 6/80

TABLE OF CONTENTS

		Page
I.	PROJECT DESCRIPTION	1
II.	POTENTIAL ENVIRONMENTAL EFFECTS	4
III.	ENVIRONMENTAL EVALUATION CHECKLIST	6
	A. GENERAL CONSIDERATIONS	6
	B. ENVIRONMENTAL IMPACTS	10
	1. Land Use	10
	2. Visual Quality and Urban Design	11
	3. Population/Employment/Housing	12
	4. Transportation/Circulation	13
	5. Noise	14
	6. Air Quality/Climate	16
	7. Utilities and Public Services	17
	8. Biology	20
	9. Land	20
	10. Water	21
	11. Energy/Natural Resources	22
	12. Hazards	23
	13. Cultural	23
	C. MITIGATION MEASURES	24
	D. ALTERNATIVES	27
	E. MANDATORY FINDINGS OF SIGNIFICANCE	28

LIST OF FIGURES

		Page
1.	Project Site and Vicinity	2
2.	Street Level Plan	3
3.	Post Street Building Elevation	7
4.	Lobby Level Plan	8
5.	Post Street Section	9

OLYMPIC CLUB HOTEL INITIAL STUDY
(Initial Study)

Project File No. 81.400E
Address: 500 Post Street

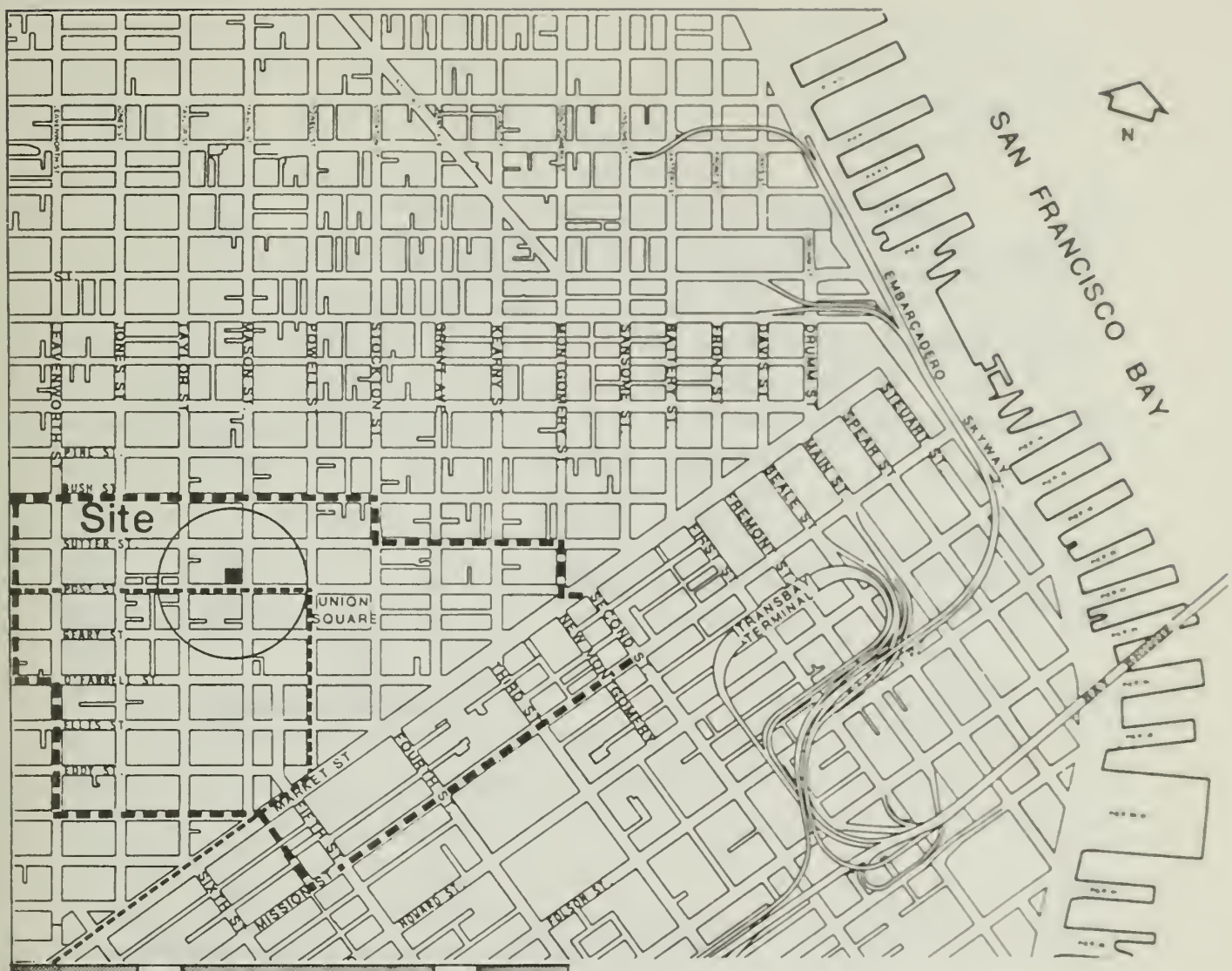
Title: Olympic Club Hotel
Assessor's Block 297, Lots 4,5

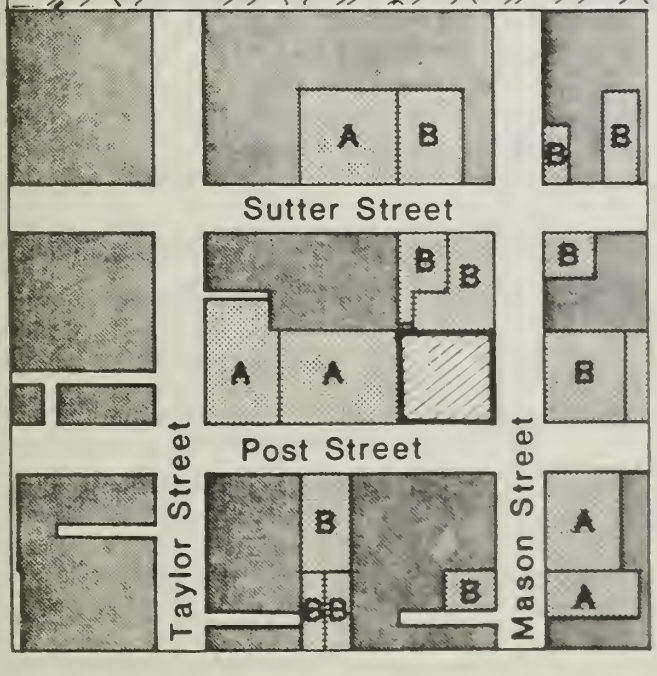
I. PROJECT DESCRIPTION

Portman Properties of Atlanta, Georgia proposes to build a 22-story, 374-unit luxury hotel at 500 Post St., in the vicinity of Union Square (see Figure 1). The 293,481 sq. ft. project would have access on both Post and Mason Sts. (see Figure 2, p. 3). The proposed hotel would cater to small groups, businesses, and independent travelers. The project would include 17 guest-room levels, a ballroom, meeting rooms, a coffee shop, a gourmet restaurant, a "sidewalk" cafe, a rooftop observation deck, a newsstand, a gift shop, a five-level subsurface parking garage, and other amenities. A distinctive feature of the project would be a central atrium rising from the lobby level to the rooftop garden on the 22nd floor.

The project's maximum centerline height above street level would be about 278 feet; its maximum plan dimension would be 137 feet; and its maximum diagonal dimension would be 194 feet. The project's Floor Area Ratio (FAR) would be about 10.2:1. Its facade would echo the keystone arches of some of the windows in the adjacent Olympic Club Hotel at 524 Post St. The exterior finish would be brick similar in color and style to that of the Olympic Club. The project would make no use of reflective glass or high-intensity lighting. Pedestrian amenities would include street trees and sidewalk plantings.

The 42,281 sq.-ft. project site, owned by the Olympic Club, consists of Lots 4 and 5 in Assessor's Block 297. Lot 4 forms the southeastern corner of the project block, with frontage on both Post and Mason Sts; the proposed hotel would be located entirely on Lot 4. An existing 202-stall public parking garage and car rental agency on Lot 4 would be eliminated by the project. Lot 5, with an area of 23,382 sq. ft., is occupied by the 139,000 sq. ft. Olympic Club, which would be retained; renovation of this building may be undertaken subsequently, but is not part of the project.





Above: Site Location

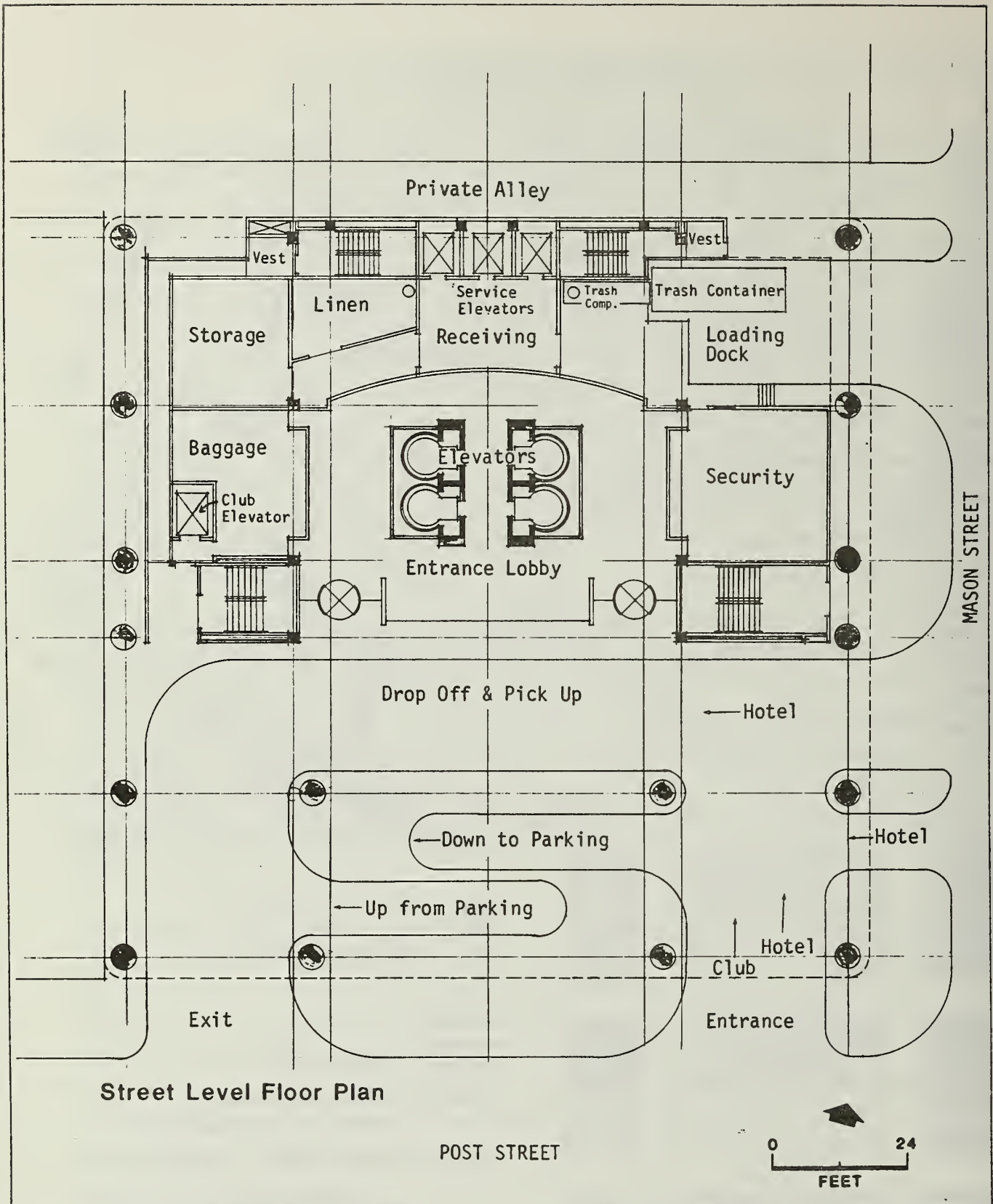
Left: Lot/Block Plan

LEGEND

- Project Site
- A — Heritage Buildings (Letter indicates Heritage rating)
- Union Square Hotel District
- Tenderloin (North of Market Planning Coalition, 1981)

FIGURE 1: Project Site and Vicinity

SOURCE: Environmental Science Associates, Inc.



SOURCE: John Portman and Associates

FIGURE 2: Street Level Plan

The project would be located about a block from Union Square in the Union Square Hotel District (see Figure 1, p. 2). Nearby land uses include private clubs, a church, transient and residential hotels, offices, and restaurants. The proposed hotel would be within walking distance of Chinatown and the Downtown Financial District.

The site is in the Downtown General Commercial (C-3-G) District, where hotels are an allowed use. The maximum basic FAR allowed in the C-3-G District is 10:1. The project would be in the 240-H Height and Bulk District, where the allowable building height is 240 ft., the maximum plan dimension (length) allowed above a height of 100 ft. is 170 ft., and the maximum diagonal dimension allowed above a height of 100 ft. is 200 ft.

The site is owned by the Olympic Club; Lot 4 is leased to a parking garage. Upon project approval, a long-term lease between Portman Properties and the Olympic Club would become effective.

II. POTENTIAL ENVIRONMENTAL EFFECTS

The proposed project was examined in this Initial Study to determine its potential effects on the environment. Potential environmental issues associated with project implementation that will be addressed in an EIR on the project include:

- The relationship of the project to the Comprehensive Plan, Planning Code, and other adopted environmental plans and goals;
- The relationship of the project to land uses in the project vicinity;
- Project height and bulk, in relation to adjacent buildings;
- Obstruction of views from adjacent buildings by the project;
- Project effects on population, housing, and employment in San Francisco;
- Vehicular traffic, parking, and public transit impacts from the project;
- Construction noise and vibration;
- Construction and traffic-generated air quality effects;
- Wind and shadow effects;

- Glass panels falling from the structure as a result of seismic activity;
- Effects of construction dewatering on adjacent buildings;
- Energy conservation;
- Effects on culturally significant structures adjacent to the site;
- Effects of cumulative traffic, pollutant emissions, and energy consumption increases in the downtown area in relation to the project; and
- Growth inducement.

The following potential environmental impacts were determined either to be insignificant or to have been mitigated through measures included in the project design, and will not be addressed in the EIR on this project:

Glare: The project would contain no reflective glass or high-intensity lighting, so it would impose no reflection or glaring light on adjacent properties

Operational Noise: Project operation would not perceptibly increase noise levels in the project vicinity.

Utilities and Community Services: The proposed project would increase demand for utilities and public services, but would not require additional resources.

Biology: The proposed project would not affect any plants or animals.

Land: Appropriate construction measures included in the project would mitigate any potentially hazardous geologic or soils conditions identified on the site.

Water: The proposed project would increase water use on the site by approximately 58,000 gallons per day. The quality of surface runoff is expected to improve because water would be directed to storm drains without coming in contact with grease and oil from parked cars.

Hazards: The project would neither cause nor be affected by hazardous uses or health hazards, other than those discussed for air quality effects. The project sponsor would prepare an Emergency Response Plan in coordination with the City.

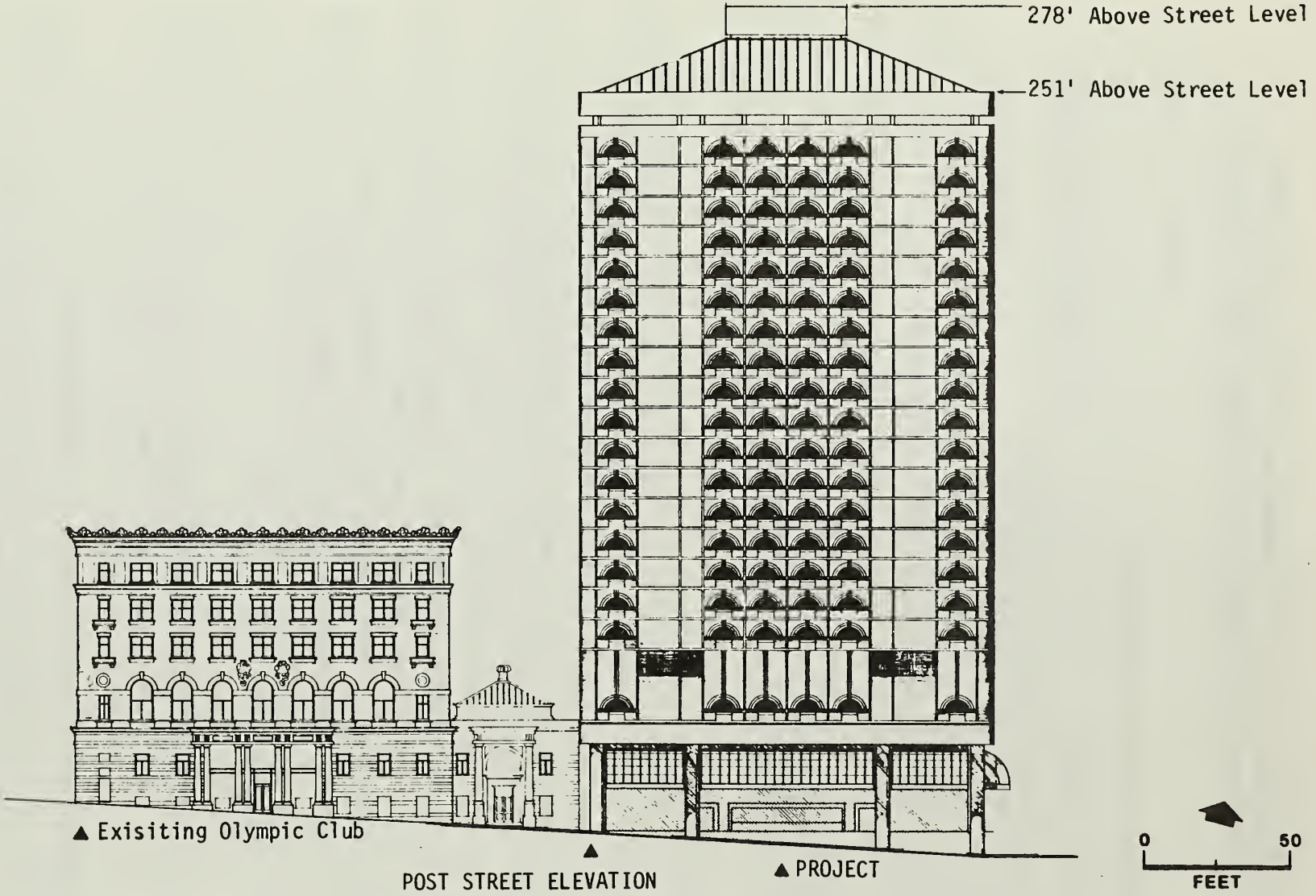
Archaeological Resources: The project sponsor has agreed to a mitigation measure that would protect any archaeological resources found on the site.

III. ENVIRONMENTAL EVALUATION CHECKLIST

A. GENERAL CONSIDERATIONS:	Yes	Maybe	No	N/A	Disc.
1. Would the project conflict with objectives and policies in the Comprehensive Plan (Master Plan) of the City?	___	X	___	___	X
2. Would the project require a variance, or other special authorization under the City Planning Code?	X	___	___	___	X
3. Would the project require approval of permits from City Departments other than DCP or BBI, or from Regional, State or Federal agencies?	___	___	X	___	X
4. Would the project conflict with adopted environmental plans and goals?	___	X	___	___	X

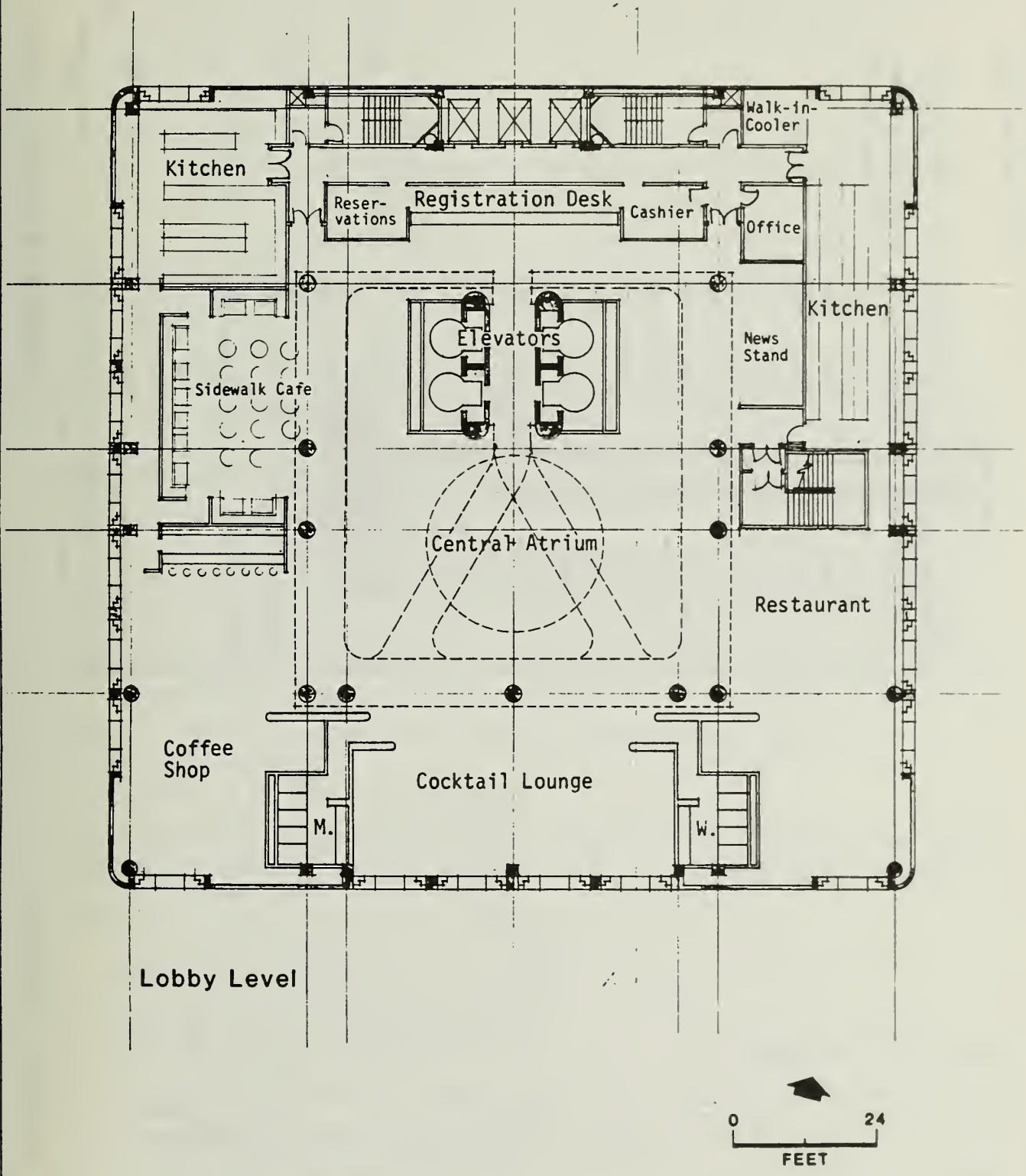
The proposed project would provide visitor lodging convenient to the downtown area, Chinatown, and Union Square. It would thus respond to the following policies in the Commerce and Industry Element: encourage development that provides substantial net benefits to the City, provide expanded employment opportunities for unskilled and semi-skilled City residents, and promote visitor trade and tourist-related activities. The project would respond to the policy expressed in the Urban Design Element of promoting visual harmony between adjacent buildings, but may not respond to the policy of relating the height of new development to the height of existing structures (see Figure 3). The project's circulation plan may not be supported by policies to reduce pedestrian hazards (see Figure 2, p. 3).

The project block is zoned Downtown General Commercial, C-3-G, where hotels are allowed uses. The Planning Code limits buildings in this district to a basic Floor Area Ratio (FAR) of 10:1; bonuses claimed for innovative design or provision of public amenities could result in an FAR in excess of 10:1. The project (293,481 sq. ft.), in combination with the existing Olympic Club (139,000 sq. ft.) on a 42,281 sq. ft. site, yields an FAR of about 10.2:1.



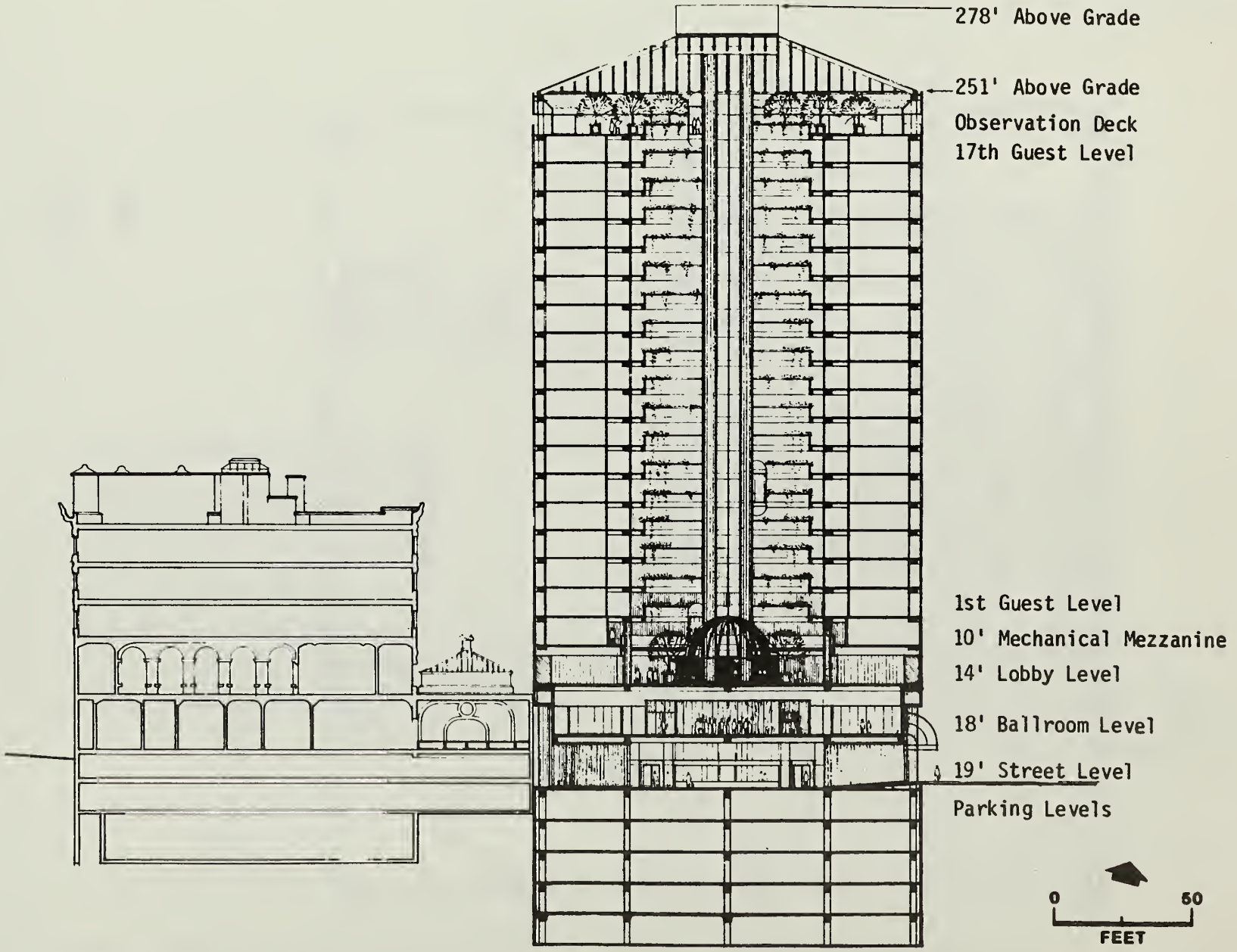
SOURCE: John Portman and Associates

FIGURE 3: Post Street Building Elevation



SOURCE: John Portman and Associates

FIGURE 4: Lobby Level Plan



SOURCE: John Portman and Associates

FIGURE 5: Post Street Section

The project would qualify for a 10,000 sq. ft. bonus, however, for providing a rooftop observation deck (see Figure 5, p.9). This would increase the allowable FAR to about 10.2:1.

The project site is in the 240-H Height and Bulk District. The length and diagonal dimensions of the project, 137 and 194 ft., respectively, would be within the limits set by the Planning Code (Section 270, Table 7). The project's height would be about 278 ft., measured from the average curb elevation on Post St. to the top of the structure at its center. Measured from the average curb elevation on Mason Street, it would be about 275 feet. The Planning Code limits the project's height to 240 ft., plus 16 feet for mechanical floors. The project would require either a minor deviation from Planning Code provisions for height measurement as a conditional use for a Planned Unit Development, or a Zoning Map Ordinance amendment for the building height. Project conformity with height and bulk restrictions of the Planning Code will be addressed in the EIR.

The project would include parking for the hotel, for retail uses included in the project, and for reserved use by Olympic Club members; 202 parking spaces would be located in five subsurface parking levels. The project would require conditional use authorization because more than 7% of the floor area would be used for parking. Parking issues related to the Planning Code will be addressed in the EIR.

The project would require discretionary review by the City Planning Commission under Resolution 8474, which requires review of all projects in the Downtown area.

B. ENVIRONMENTAL IMPACTS:

1. Land Use. Would the proposed project:

	Yes	Maybe	No	N/A	Disc.
a. Be different from surrounding land uses?	___	___	X	___	X
b. Disrupt or divide the physical arrangement of an established community?	___	___	X	___	X

The project site is three blocks south of Chinatown and one block west of Union Square. The neighborhood contains residential and tourist hotels, apartments, private clubs, offices, parking garages, restaurants, small retail uses, an educational institution, a car rental agency, and a church. Newer, large-scale uses, such as office buildings and tourist hotels, are interspersed with older and smaller-scale uses, such as the private clubs and the church.

The project would be in the Union Square Hotel District (see Figure 1, p. 2). The Hotel St. Francis is about one-half block southeast of the site. The Hilton Hotel is two blocks south. Four major hotels are proposed for the area: the Holiday Inn and the Hotel Ramada, about three and four blocks south of the site, respectively; and the Marriott Hotel and the Lyman Jee Hotel, both about five blocks southeast of the site in the Yerba Buena Center.

The project would replace a car rental agency and a three-story, 202-space public parking garage with a 374-room hotel and a 202-space parking garage.

The project's potential impact on the Tenderloin community, and the effect of cumulative hotel development in the downtown area, will be addressed in the EIR on the project.

2. Visual Quality and Urban Design. Would the proposed project:

		Yes	Maybe	No	N/A	Disc.
a.	Obstruct or degrade any scenic view or vista open to the public?			X		X
b.	Reduce or obstruct views from adjacent or nearby buildings?	X				X
c.	Create a negative aesthetic effect?		X			X
d.	Generate light or glare affecting other properties?			X		X

The project would neither obstruct nor degrade any scenic view open to the general public. Existing buildings obstruct distant views from sidewalks and streets in the project vicinity. The closest public open space affording scenic views is Union Square, one block southeast of the site; the project would not block any scenic views available from Union Square.

The project would reduce and obstruct views from adjacent and nearby buildings. Views available from these locations are primarily of the urban streetscape in the site vicinity. Bay views may be available from the upper floors of several nearby buildings. The extent to which these views would be blocked by the project will be described in detail in the EIR on the project.

The project would be large in relation to adjoining structures. The apparent size of the project, as viewed from street level, would not be reduced by setbacks. Street-level views of the project will be presented and discussed in the EIR on the project.

The project would contain no reflective glass or high-intensity lighting, and so would not impose a reflective or glaring light on adjacent properties. It would introduce new light at night from windows in the structure.

3. Population/Employment/Housing. Would the proposed project:

		Yes	Maybe	No	N/A	Disc.
a.	Alter the density of the area population?	X				X
b.	Have a growth-inducing effect?	X				X
c.	Require relocation of housing or businesses, with a displacement of people, in order to clear the site?	X				X
d.	Create or eliminate jobs during construction and operation and maintenance of the project?	X				X
e.	Create an additional demand for housing in San Francisco?		X			X

The project would increase the number of people permanently employed on the site from 13 to about 320./1/ The existing parking garage and car rental agency businesses and their employees would be displaced; the project sponsor has not provided for relocation of these businesses. The project's estimated 320 "primary" tourist hotel-sector jobs would create an unknown number of "secondary" jobs in the City's tourist services sector. Although many of the jobs created by the project could be filled by unemployed residents of

San Francisco, direct and indirect growth-inducing effects would result from the higher level of employment on the project site and the subsequent need for housing and various support services. Housing demand, direct and indirect employment, fiscal impacts, and growth inducement will be addressed in the EIR.

4. Transportation/Circulation. Would the construction or operation of the project result in:

		Yes	Maybe	No	N/A	Disc.
a.	Change in use of existing transportation systems?	X				X
b.	An increase in traffic which is substantial in relation to existing loads and street capacity?		X			X
c.	Effects on existing parking facilities, or demand for new parking?	X				X
d.	Alteration to current patterns of circulation or movement of people and/or goods?	X				X
e.	Increase in traffic hazards to motor vehicles, bicyclists or pedestrians?	X				X
f.	A need for maintenance or improvement or change in configuration of existing public roads or facilities?			X		
g.	Construction of new public roads?			X		

The project would increase use of existing transportation systems, including freeways, local streets, and transit systems that serve downtown San Francisco. The EIR will contain projections of the number of passenger and vehicle trips generated by the proposed project; an analysis of the impacts of these trips on streets, freeways, and intersections; the effects of the project on pedestrian movements in the project vicinity; and project and cumulative impacts on the local Muni transit routes and on regional systems.

The project's street-level plan is shown in Figure 4, p. 8. Vehicular access to the site would be via drives on Mason and Post Sts. Egress from the site would be via an exit drive on Post St. Loading docks for two trucks would be located off Mason St. north of Post St. The impact of the entrance and exit drives on vehicular and pedestrian circulation will be analyzed in the EIR.

The project would include a 202-stall parking garage, and would eliminate about 202 existing spaces. On-site parking would be inadequate for hotel guests, the Olympic Club members, and project employees. The EIR would contain a projection of parking and loading demand, including the effect of removing the existing parking garage.

5. Noise.

	Yes	Maybe	No	N/A	Disc.
a. Would the proposed project result in generation of noise levels in excess of those currently existing in the area? (During construction)	X				X
b. Would existing noise levels impact the proposed use?		X			X
c. Are Title 25 Noise Insulation Standards applicable?	X				X

Demolition, excavation, and building construction would increase noise in the site vicinity for about 24 months. Throughout construction, trucks would haul debris away from the site and bring building materials to it. The San Francisco Noise Ordinance limits noise from powered construction equipment, except impact tools, to 80 dBA, measured at 100 ft./1/ The ordinance also limits the allowable noise between 8 p.m. and 7 a.m. to 5 dBA above the ambient noise level, measured at the property line, unless the San Francisco Department of Public Works issues a special permit.

The project would probably require piledriving; this generates peak noise at impact of up to 110 dBA, measured at 50 ft. Piledriving would interfere with speech and concentration, and would annoy construction workers and others present in the project vicinity. Project and cumulative construction noise in the project vicinity will be addressed in the EIR on the project.

Noise would not exceed existing levels after project completion. The downtown San Francisco noise environment is dominated by vehicular traffic noise. Traffic generated by the project would increase traffic noise by less than 1 dBA. A 1 dBA increase in environmental noise is imperceptible to the untrained human ear.

The Environmental Protection Element of the Comprehensive Plan, which indicates an existing day-night average noise level (Ldn) of 70 dBA on Post St., contains guidelines for determining the compatibility of land uses with various noise environments./2/ For hotels the guidelines recommend no special noise control measures at exterior noise levels of less than 60 dBA (Ldn). The exterior noise level at the hotel would exceed 60 dBA (Ldn), so the guidelines recommend a detailed analysis of the noise reduction requirements of the building structure and the necessary noise insulation features of the building design.

Title 25 of the California Administrative Code, Noise Insulation Standards, applies to all new hotels. The acceptable outdoor noise level for hotels is a Community Noise Equivalent Level (CNEL) of 60 dBA./3/ The exterior noise environment of the site exceeds 60 dBA CNEL at street level. The project would require an acoustical analysis to show that the maximum interior noise level would be 45 dBA with windows closed. Compliance with Title 25 would satisfy the recommendations of the Environmental Protection Element. The project sponsor has acknowledged that the project would be constructed to conform with Title 25 Noise Insulation Standards, so no further analysis of interior noise levels is needed in the EIR.

NOTES - Noise

/1/ Decibel (dB) is a logarithmic unit of sound energy intensity. Sound waves, traveling outward from a source, exert a force known as sound pressure level (commonly called "sound level"), measured in decibels. dBA refers to decibel measurement, corrected electronically for the variation in frequency response of the typical human ear at commonly encountered noise levels.

/2/ Ldn is an averaged sound level measurement, based on human reaction to cumulative noise exposure over a 24-hour period. It takes into account the greater annoyance of nighttime noise by adding 10 dBA to the ambient sound level measured between 10 p.m. and 7 a.m.

/3/ Community Noise Equivalent Level (CNEL); similar to Ldn except that sound level measurements taken between 7 p.m. and 10 p.m. are weighted 5 dBA higher than daytime sounds, in addition to the 10 dBA 10 p.m. to 7 a.m. weighting.

6. Air Quality/Climate. Would the proposed project result in:

	Yes	Maybe	No	N/A	Disc.
a. Violation of any ambient air quality standard or contribution to an existing air quality violation?	X				X
b. Exposure of sensitive receptors to air pollutants?		X			X
c. Creation of objectionable odors?			X		
d. Burning of any materials including brush, trees, or construction materials?			X		
e. Alteration of wind, moisture, or temperature (including sun shading effects), or any change in climate, either locally or regionally?	X				X

Air Quality/Climate

Asphalt, oil-based architectural coatings, and paints, if used in project construction, would emit hydrocarbons. Diesel-powered construction equipment would emit (in decreasing order by weight) nitrogen oxides, carbon monoxide, sulfur oxides, hydrocarbons, and particulate. Dust from construction activities may affect nearby sensitive receptors. The temporary effects of project construction on air quality in the project vicinity will be addressed in the EIR.

Concentrations of pollutants generated by other construction in the project vicinity would decrease rapidly with distance from the source, but may add sufficiently to project emissions to cause annoyance and to affect sensitive receptors. This issue will be addressed in the EIR.

When occupied, the project would generate additional vehicular traffic that would emit carbon monoxide, hydrocarbons, nitrogen oxides, particulate, and sulfur oxides./1/ Natural gas used by the project for water heating and space heating would also emit (in decreasing order by weight) nitrogen oxides, carbon monoxide, particulate, hydrocarbons, and sulfur oxides./1/ Project emissions would add to local and regional accumulations of pollutants during adverse meteorological conditions, such as inversions. The contribution of the project to degradation of local air quality, its effect on sensitive receptors, and cumulative air quality effects will be analyzed in the EIR.

Shadows and Wind

Shadows cast by the project would largely coincide with shadows cast by existing buildings in the project area, but would create some new shadow. The project would shade the adjacent Marines Memorial Building during all seasons of the year for most of the day. In spring and fall, the project would create new shadows on Taylor, Sutter, and Mason Sts., and would shade the facades of buildings facing the site across Mason St. On summer afternoons, the project would create new shadows on Mason St. At no time would the project shade an existing public park or plaza. A detailed analysis of shadows created by the project, accompanied by shadow diagrams of the project vicinity, will be included in the EIR.

The project would alter wind ratios at street level, probably increasing west winds along Post St. Wind alteration and its effects on project occupants, adjacent property, and pedestrians will be evaluated in the EIR.

NOTES - Air Quality/Climate

/1/ U. S. Environmental Protection Agency, 1975, Compilation of Air Pollutant Emission Factors.

7. Utilities and Public Services. Would the proposed project have an effect upon, or result in a need for new or altered, governmental services in any of the following:

	Yes	Maybe	No	N/A	Disc.
fire protection	___	___	X	___	X
police protection	___	___	X	___	X
schools	___	___	X	___	X
parks or other recreational facilities	___	___	X	___	X
maintenance of public facilities	___	___	X	___	X
power or natural gas	___	___	X	___	X
communications systems	___	___	X	___	X
water	___	___	X	___	X
sewer/storm water drainage	___	___	X	___	X
solid waste collection and disposal	___	___	X	___	X

Fire Protection: No additional Fire Department personnel or equipment would be required to serve the project. The fire stations near the site, listed in order of response to a call from the site, are Station 3 at 1067 Post St., Station 41 at 1325 Leavenworth St., and Station 1 at 416 Jessie St. Maximum response time from these stations would be three minutes, four minutes, and four minutes, respectively. High-pressure hydrants are located at the southeast corner of Post and Taylor Sts., the southeast corner of Mason and Sutter Sts., the northeast corner of Mason and Geary Sts., and the northwest and southeast corners of Post and Powell Sts. Three low-pressure hydrants exist on the project block, including one on the site. Three others are located within one block of the site. These hydrants would be adequate to serve the project; no new improvements or expansions would be required./1/

The project would not affect cumulative fire service in downtown San Francisco. New highrise buildings must comply with the Life Safety provisions of the San Francisco Building Code, so most fires in these buildings can be expected to require minimum response by the Fire Department. This building would be Type 1 construction /2/, so the chance of fire spreading from building to building is relatively small. Replacing older, more vulnerable, low occupancy structures with higher quality, greater occupancy high-rise buildings probably has no measureable effect on fire protection demand./3/

Police Protection: The proposed project would increase population and private property on the site, thus increasing the opportunity for crime. The project site is located in the Central Police District and Reporting Area 352; the Central Police Station is located at 766 Vallejo. The project area is patrolled at all hours by one radio-dispatched patrol car. Reporting Area 352 experiences more crime annually than the average for San Francisco, but is not among the highest crime areas. Residential and hotel burglaries are the most frequently reported crimes. The Police Department recommends that the project include adequate security systems and that hotel guests be informed of the risks of walking through the Tenderloin area south of the project site. The project would not create a need for additional Police Department resources./4/

Parks and other Recreational Facilities: The project would include no residential units, so it would generate no need for residential recreational facilities. Tourists wishing to visit a park in the project area may visit Union Square, the nearest public open space to the project site (see Figure 1, page 2).

Water: The project could be served from either the eight-inch main under Mason St. or the six-inch main under Post St. The project would require about 58,000 gallons per day (gpd) of water at the anticipated occupancy rate of 78%. The mains serving the site have sufficient capacity and pressure to meet the additional demand created by the project./5/

Sanitary/Storm Sewer: The site is served by three-foot by five-foot brick sewers under Post St. and under Mason St. The project would generate about 58,000 gpd of wastewater at 78% occupancy; sewers serving the site have sufficient capacity to carry these additional flows. No expansion of the existing collection and treatment system would be necessary./6,7/

Solid Waste Disposal: The project would generate about 700 pounds per day of solid waste at 78% occupancy. The Golden Gate Disposal Company, which serves the site, anticipates no problems in meeting the additional collection demand./8/ A trash compactor would be used to reduce the volume of solid waste generated by the project (see Figure 2, p. 3). Solid waste disposal impacts depend on the eventual selection of a disposal method or site for San Francisco's solid wastes./9/

NOTES - Utilities and Public Services

/1/ Joseph A. Sullivan, Chief, Division of Support Service, San Francisco Fire Department; letter, November 20, 1981.

/2/ Type 1 buildings have structural elements made of reinforced concrete, reinforced grouted masonry, reinforced hollow concrete masonry or steel; and the exterior walls, roofs, floors, and some inner walls are "fire-resistive incombustible construction" (San Francisco Building Code, Section 1801).

/3/ Information contained in this paragraph is provided by Bendix Environmental Research, Inc., Environmental Consultants and Fire Protection Engineers; confirmed by Emmet D. Condon, Deputy Chief, San Francisco Fire Department, September 24, 1981.

/4/ Sergeant James Farrell, Planning and Research Division, San Francisco Police Department; telephone communication, November 30, 1981.

/5/ Jack E. Kenck, Manager, City Distribution Division, San Francisco Water Department; letter, November 25, 1981.

/6/ Don Hayashi, Director of Citizen Participation, San Francisco Clean Water Program; telephone communication, November 30, 1981.

/7/ Jim Walsh, Associate Civil Engineer, Division of Sewer System Design, San Francisco Clean Water Program; telephone communication, November 30, 1981.

/8/ Fiore Garbarino, Treasurer, Golden Gate Disposal Company; telephone communication, November 30, 1981.

/9/ Several new landfill sites are currently under consideration by the Board of Supervisors in addition to establishing a comprehensive recycling program and the possibility of constructing a waste-to-energy plant. Roger Boas, Chief Administrative Officer, Memorandum dated February 24, 1981.

8. Biology.

	Yes	Maybe	No	N/A	Disc.
a. Would there be a reduction in plant and/or animal habitat or interference with the movement of migratory fish or wildlife species?	___	___	X	___	X
b. Would the project affect the existence or habitat of any rare, endangered or unique species located on or near the site?	___	___	X	___	___
c. Would the project require removal of mature scenic trees?	___	___	X	___	___

The proposed project would not affect any plant or animal life or habitat.

9. Land. (topography, soils, geology) Would the proposed project result in or be subject to:

	Yes	Maybe	No	N/A	Disc.
a. Potentially hazardous geologic or soils conditions on or immediately adjoining the site? (slides, subsidence, erosion, and liquefaction)	___	___	X	___	X
b. Grading? (consider height, steepness and visibility of proposed slopes; consider effect of grading on trees and ridge tops)	X	___	___	___	X
c. Generation of substantial spoils during site preparation, grading, dredging or fill?	___	X	___	___	X

The project site is not in a Special Geologic Study Area designated in the Community Safety Element of the Comprehensive Plan. The project sponsor would nevertheless prepare a geotechnical study of the site that would reveal any geologic or seismic hazards and describe subsurface conditions. The project sponsor would comply with any compensating structural design recommendations based on the geotechnical study.

The project sponsor would ensure that project construction complied with the San Francisco Building Code and the Excavation Standards of the California Occupational Safety and Health Agency. Section 2903.4 of the Building Code specifies that "the foundation type of any building or structure shall be selected with due consideration given to subsurface conditions and requirements for the structural behavior." The project's structural design would be required to meet the minimum safety requirements for lateral seismic forces (San Francisco Building Code, Section 2313 and 2314.D.1). This would be done by the project sponsor, so no further analysis is needed in the EIR.

The effect of seismic activity on glass panels in the building's curtain wall is not now known and will be analyzed in the EIR.

The total amount of material to be removed from the site is not now known. Excavation and grading required for the underground parking would entail removal of about 21,000 cu. yds. of dirt (see Figure 5, p. 9). Demolition of the existing parking lot would result in the removal of used concrete and pavement from the site. Material removed from the site would be disposed of at an approved disposal site.

10. Water. Would the proposed project result in:

		Yes	Maybe	No	N/A	Disc.
a.	Reduction in the quality of surface water?	___	___	X	___	X
b.	Change in runoff or alteration to drainage patterns?	___	___	X	___	X
c.	Change in water use?	X	___	___	___	X
d.	Change in quality of public water supply or in quality or quantity (dewatering) of groundwater?	___	X	___	___	X

Current water use is estimated to be less than 1,000 gpd. Projected water use for the project is about 58,000 gpd.

The site is now covered with impervious surfaces, so the project would not produce any changes in the quantity of runoff or in drainage patterns. Water quality of surface runoff would probably be improved by removing the existing open parking lot as a source of contaminants from automobiles (e.g. oils, greases, and heavy metals).

Dewatering may be required during construction. The effects of dewatering on adjacent buildings are not now known and will be analyzed in the EIR.

11. Energy/Natural Resources. Would the proposed project result in:

		Yes	Maybe	No	N/A	Disc.
a.	Any change in consumption of energy?	X				X
b.	Substantial increase in demand on existing energy sources?			X		X
c.	An effect on the potential use, extraction, conservation or depletion of a natural resource?		X			X

The project would require energy for its construction, including fuel for power construction equipment, labor, and the energy embodied in building materials selected for the structure. When occupied, the project would increase annual energy consumption in downtown San Francisco by providing about 293,000 square ft. of new floor space on the project site for hotel and retail use. The detailed final design of the project is not yet available, so no projections of the project's operational energy consumption and energy efficiency can be made. The project would be designed to conform to Title 24 Energy Conservation Standards for New Non-Residential Buildings (California Administrative Code). Energy requirements for project construction and operation will be analyzed in the EIR.

Although the project's energy demand would not have a substantial effect on resource extraction, it would contribute to cumulative energy consumption that will result in depletion of nonrenewable energy resources. Shadows from the

structure could reduce the feasibility of future active solar energy collection installations in some nearby off-site locations. Shadow effects and cumulative energy consumption impacts on downtown San Francisco will be addressed in the EIR. No other natural resources would be directly affected.

12. Hazards. Would the proposed project result in:

	Yes	Maybe	No	N/A	Disc.
a. Increased risk of explosion or release of hazardous substances (e.g., oil, pesticides, chemicals or radiation), in the event of an accident, or cause other dangers to public health and safety?	___	___	X	___	___
b. Creation of or exposure to a potential health hazard?	___	___	X	___	___
c. Possible interference with an emergency response plan or emergency evacuation plan?	___	X	___	___	X

The project would result in greater numbers of people on the site, which would increase the difficulty of evacuating people in an emergency. The hazard mitigation measure committed to by the project sponsor would partially mitigate this impact.

13. Cultural. Would the proposed project:

	Yes	Maybe	No	N/A	Disc.
a. Include or affect a historic site, structure or building?	___	___	X	___	X
b. Include or affect a known archaeological resource or an area of archaeological resource potential?	___	___	X	___	X
c. Cause a physical change affecting unique ethnic or cultural values?	___	___	X	___	___

The project is located in an area containing several architecturally significant or historic structures (see Figure 1, p. 2). Settlement of soil as a result of project construction could damage these buildings. Mitigation measures have been proposed as part of the project, however, to prevent such damage and to repair any damage that were to occur. Historic buildings in the project vicinity, their architectural and historic ratings, and the project's visual conformity with these structures will be described in the EIR.

No archaeological resources are known to exist on the site; it is inland of the 1849 shoreline and within the area destroyed in the 1906 fire./1/ The project sponsor has agreed to mitigation measures that would protect any archaeological resources discovered on the project site (see p. 29).

NOTE - Cultural

/1/ Oscar Lewis, 1966, San Francisco: Mission to Metropolis.

C. MITIGATION MEASURES:

	Yes	No	Disc.
Are mitigation measures included in the project?	X		X
Are other mitigation measures available?	X		X

Mitigation measures will be developed for adverse project impacts identified in the EIR. Mitigation measures included in the project at this time follow.

INCLUDED IN THE PROJECT

URBAN DESIGN

- Pedestrian amenities would include street trees and sidewalk plantings.

- The project's facade would continue some of the horizontal lines of the adjacent Olympic Club Hotel, would echo the keystone arches of some of its windows, and would be finished with brick similar in color and style to that of the Olympic Club (see Figure 3, p. 7).

TRANSPORTATION/CIRCULATION

- The project sponsor and construction contractor would meet with the Traffic Engineering Division of the Bureau of Engineering and with the Office of Environmental Review to determine traffic mitigation measures to reduce traffic congestion during construction.

- Pacific Gas and Electric Company would coordinate work schedules with other utilities requiring trenching so that street disruption would take place during weekends and off-peak hours. This would be done through the San Francisco Committee for Utility Liaison on Construction and other Projects (CULCOP).

NOISE

- Enclosures or barriers would be provided for all stationary equipment (such as compressors).

AIR QUALITY AND CLIMATE

- Unpaved demolition and construction areas would be wetted at least twice a day with complete coverage during excavation to reduce dust emissions. This would reduce particulate emissions (dust) by about 50%.

- The general contractor would maintain and operate construction equipment in such a way as to minimize exhaust emissions. During construction, trucks in loading or unloading queues would be kept with their engines off when not in use to reduce vehicle emissions.

UTILITIES AND PUBLIC SERVICES

- The project would incorporate all emergency response systems stipulated by the Life Safety Code, including fire alarms, an emergency communication system, an emergency power supply, and an on-site emergency water supply. These measures would reduce hazards to building occupants during an earthquake or fire.

- The building would be equipped with a central trash compactor to reduce the volume of solid waste requiring storage and transportation. Separate storage facilities would be provided for recyclable waste material.

LAND (Topography, Soils, Geology)

- Foundation and structural design studies would be conducted for the building by a California licensed structural engineer and a geotechnical consultant. The project sponsor would follow the recommendations of these studies during the final design and construction of the project.

- The project sponsor would post a surety bond, if required by the San Francisco Department of Public Works, before issuance of a permit to excavate. Such a bond would protect the City against damages to City-owned sidewalks, streets and utilities.

- The project sponsor would require the contractor and sub-contractors to obtain a Faithful Performance and Payment Bond, if proper financial capability is not evident, and to be responsible for any damage to existing buildings which might result from excavation. This bond would protect the project sponsor and owners of adjacent properties if any damage to these properties were to result from construction activities.

- Excavation pit walls would be shored up and protected from slumping or lateral movement of soils into the pit.

- If dewatering were to be necessary, the City would require a lateral and settlement survey to monitor any movement or settlement of surrounding buildings and adjacent streets during the dewatering. Control lines and benchmarks would be established for monitoring horizontal and vertical movement. Costs for the survey and any necessary repairs to services under the streets would be borne by the contractor.

ENERGY

- Electrical appliances would be chosen on the basis of energy efficiency.

- Openable windows would be installed for ventilation.

- Recyclable materials would be separated and recycled to reduce solid waste generation by the project, conserve natural resources, and recover some of the energy embodied in the materials recycled.

HAZARDS

- An evacuation and emergency response plan would be developed by the project sponsor in consultation with the Mayor's Office of Emergency Services to ensure coordination between the City's emergency planning activities and the project's plan, and to provide for building occupants in an emergency. The project's plan would be reviewed by the Office of Emergency Services and implemented by building management before a final building permit is issued by the Department of Public Works.

CULTURAL

- Should evidence of cultural or historic artifacts of significance be found during project excavation, the Environmental Review Officer and the President of the Landmarks Preservation Advisory Board would be notified. The project sponsor would select an archaeologist to help the Office of Environmental Review determine the significance of the find and whether feasible measures, including appropriate security measures, should be implemented to preserve or recover such artifacts. The Environmental Review Officer would then recommend specific mitigation measures, if necessary, and recommendations would be sent to the State Office of Historic Preservation. Excavation or construction which might damage the discovered cultural resources would be suspended for a maximum of four weeks to permit inspection, recommendation and retrieval, if appropriate.

D. ALTERNATIVES:

	Yes	No	Disc.
Were other alternatives considered:	X		X

Alternatives to the proposed project include:

- The No-Project alternative that would retain the existing parking garage and the car rental agency;

- The Guiding Downtown Development alternative that would conform to "Guiding Downtown Development" (City and County of San Francisco, 1981);

- An All Housing alternative that would provide housing instead of a hotel;

- A Partial Housing alternative that would include both residential housing and hotel;

- A Code alternative that would conform to the City Planning Code;

- Design alternatives that would contain the same uses and square footage as the project, with a different spatial arrangement or appearance;

These alternatives will be addressed in the EIR.

E. MANDATORY FINDINGS OF SIGNIFICANCE:

		Yes	No	Disc.
1.	Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal, or eliminate important examples of the major periods of California history or prehistory?	___	X	___
2.	Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	___	X	___
3.	Does the project have possible environmental effects which are individually limited, but cumulatively considerable?	X	___	X

	Yes	No	Disc.
4. Would the project cause substantial adverse effects on human beings, either directly or indirectly?	___	X	___
5. Is there a serious public controversy concerning the possible environmental effect of the project?	___	X	___

The project has several environmental effects, such as increased traffic, increased emission of air pollutants, increased shadow, and increased wind ratios. These effects may be limited when considered separately, but their combined effect would result in a change in the environment in the vicinity of the site.

n the basis of this initial evaluation:

___ I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared by the Department of City Planning.

___ I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because the mitigation measures, numbers____, in the discussion have been included as part of the proposed project. A NEGATIVE DECLARATION will be prepared.

✓ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Robert W. Passmore
Assistant Director-Implementation

for

Dean Macris
Director

Date: 3/9/82

APPENDIX B: WIND TUNNEL STUDY

Prepared for

Environmental Science Associates, Inc.
1390 Market Street
San Francisco, CA 94102

PROJECT: Olympic Club Hotel

INITIAL WIND-TUNNEL STUDY

Prepared by

Dr. B. R. White
3207 Shelter Cove
Davis, CA 95616
(916) 758-1496

I. MODEL AND WIND-TUNNEL FACILITIES

Model

A 1/50 scaled model of the downtown San Francisco area surrounding the proposed building site for several blocks in all directions was provided by ESA, Inc. The model was capable of having 3 configurations (the existing, proposed, and Alternative "B" models) each available for separate wind-tunnel testing.

Wind-Tunnel Facilities

An environmental wind tunnel was built for testing natural atmospheric boundary layer flows past surface objects such as buildings and other structures. The tunnel has an overall length of 22 meters (m) 72 ft.), a test section of 1.22 m (4 ft.) wide by 1.83 m (6 ft.) high, and has an adjustable false ceiling. Wind speeds within the tunnel can be varied from 1 to 4 meters per second (m/s) or 4.8 to 19.3 miles per hour (mph).

The atmospheric boundary layer flow over the downtown area was simulated by an upwind network of turbulence generators. The wind tunnel's false ceiling was adjusted to provide a zero-pressure-gradient downstream flow. The adjustment of the flow to zero-pressure-gradient flow is known to properly model atmospheric boundary layers near the surface of the earth. The long flow development length allows a naturally turbulent boundary layer to develop and properly models the full-scale flow.

II. TESTING PROCEDURE

The wind study was divided into 2 parts: flow visualization and wind-speed measurements. The flow visualization observations were performed by injecting a continuous stream of smoke at various near-surface locations. The subsequent motion of the smoke was recorded, and prevailing wind directions were determined. Wind-speed measurements were made at 20 surface locations using a hot-wire anemometer, an instrument that directly relates rates of heat transfer by electronic signals. The hot-wire signals are proportional to the magnitude and steadiness of the wind. Both the mean wind speeds and corresponding turbulence intensities were measured. Thus, high wind speed and gustiness (large variable changes in wind speeds over short changes in time) could be detected. Hot-wire measurements made close to the surface have an inherent uncertainty of $\pm 5\%$ of the true values.

Calibration measurements were made before and after each series of hot-wire experiments. The calibration was accomplished by means of a Thermo-System Incorporated (TSI) Model #1126 hot-wire anemometer calibrator especially designed for low wind speeds. The calibration is accurate to $\pm 1\%$. The flow above the model was adjusted to nearly the same wind speed of 3.55 m/s (11.6 ft./sec or 7.94 mph) for all experiments. The ratio of near-surface speed to freestream wind speed was calculated from the hot-wire measurements and is presented on the attached figures.

Experiments were performed for 3 prevailing wind directions (westerely, northwesterly, and southwesterly) for the existing, proposed, and Alternative "B" settings. These wind conditions are the most common in San Francisco, and are therefore the most representative for evaluation purposes. All hot-wire measurements were taken at the same series of surface points around the building site for all 3 wind directions and the 3 building settings.

III. TEST RESULTS AND DISCUSSION

The measured wind speeds are expressed as normalized percentage of the freestream wind-tunnel speed where 1.0 represents a wind speed equal to 100% of the freestream value. The numerical ratios (called wind speed ratios) displayed on the figures can be approximately interpreted by using the following scale presented in Table 1. The assessment of wind impact on the surrounding settings is preliminary and should be construed only as an estimate of the projected actual wind environment. The scale presented in Table 1 is subjective.

It should be noted that the plotted values are not actual wind speeds, but ratios. Thus, a point having "very high" wind speed ratio could still experience light winds on a near-calm day. Likewise, a point found to have a "low" wind speed ratio could experience relatively high winds on a windy day.

TABLE 1: RELATIVE INTENSITY OF SURFACE WINDS

Intensity of Wind Speed	Wind Speed Ratio or Normalized Percentage of Freestream Speed
Low	0.00 - 0.19
Moderately low	0.20 - 0.29
Moderate	0.30 - 0.49
Moderately high	0.50 - 0.69
High	0.70 - 1.00
Very high	over 1.00

West Wind

(i) Existing setting. The near surface winds at the existing setting are low (wind speed ratios of less than 0.20) at most measured locations except for: moderately low to moderate winds occurring at the Sutter-Mason Sts. intersection; moderately low winds occurring on Sutter St. east of Mason St. (wind speed ratio of 0.27); and moderate winds occurring on Post St. east of Mason St. (0.42). Other wind features that characterize the wind environment are: (a) There is a rapid acceleration of winds, from wind speed ratios of 0.17 to 0.42, occurring from the Post-Mason Sts. intersection to the mid-block area on Post St. east of Mason St. (b) Union Square has low winds. (c) Vertical vortices are formed off the north and south corners of the Marine's Memorial building (directly north of the existing setting) resulting in moderately low (0.20 wind speed ratios) swirling winds at the street-level corner locations. (d) Easterly winds occur on Cosmo Pl. (e) Winds west of Taylor St. on Sutter St. are easterly and are apparently formed off of the downwind (east site) of Knob Hill. (f) There is an easterly wind on Post St. (east of Taylor St.) that turns south onto Taylor St. at the intersection.

(ii) Impact of project. The presence of the proposed setting would create the following changes in the wind environment: (a) There would be an effective doubling of the winds on Post St. south of the proposed building increasing winds from low (0.14 and 0.13 wind speed ratios) to moderately low (0.27 and 0.24 wind speed ratios). (b) There would be an effective 29% increase in wind, from low to moderately low, at the Post-Mason St. intersection. (c) The 2 vortices formed off of the Marine's Memorial building would vanish due to the presence of the proposed building and would reduce the street-level winds by 18% just east (on Mason St.) of the proposed building. (d) There would be an effective 56% increase, from moderately low to moderate winds, at the Sutter-Mason Sts. intersection. (e) Union Square's winds would remain low. (f) The easterly wind on Post St. (item f above) would disappear. (g) The easterly winds on Sutter St. west of Taylor St. (item e above) would become unsteady with no constant direction, but still would remain low.

The alternative setting would create the following changes in the wind environment described in the proposed setting: (a) There would be an effective 20% decrease at the Sutter-Mason Sts. intersection, with wind speed ratios decreasing from moderate to moderately low. (b) There would be low winds (instead of moderately low winds) at the Post-Mason Sts. intersection. (c) There would be an effective 27% reduction in winds, from moderately low to low on Post St. directly south of the alternative building. (d) Union Square's winds would remain low. (e) There would be a 22% increase in winds on Post St. east of Mason St. (f) There would be a vertical vortex formed off the northeast corner of the Marines Memorial building.

Northwest Winds

(i) Existing setting. The near surface winds at the existing setting are low at all measured locations. This is a result of the entire area surrounding the existing setting lying in the low speed region of the large recirculating wind flow that is formed off of the downwind side (east side) of Knob Hill.

(ii) Impact of project. The presence of the proposed setting would still result in low winds. Two minor changes that would occur are: easterly winds along Post St. (east of Mason St.) and southerly winds along Mason St. east of the proposed building.

The alternative setting would result in essentially the same wind environment as the proposed setting with all winds remaining low.

Southwest Winds

(i) Existing setting. The near surface at the existing setting are moderately low and low at most measured locations except for: (a) moderate winds at the Sutter-Mason Sts. intersection; (b) a moderately high wind (wind speed ratio of 0.57) on Post St. east of Mason St.; and, (c) a rapidly accelerating southerly wind (increase in wind speed ratio from 0.14 to 0.41) on Mason St. east of the existing building.

(ii) Impact of project. The presence of the proposed setting would create the following changes in the wind environment: (a) Winds would be effectively reduced from moderate to moderately low at the Sutter-Mason Sts. intersection. (b) Winds would be reduced from moderate to low and moderately low on Mason St. just east of the proposed building. (c) There would be an effective 86% increase in the winds from low to moderately low at the Post-Mason Sts. intersection. (d) Winds on Union Square would experience a minor 11% increase still remaining moderately low. (e) Wind west of the proposed building on Post St. would be easterly instead of westerly as in the existing setting.

The alternative setting would result in a similar wind environment as the proposed setting except there would be an effective 26% decrease in winds from moderate-moderately low to moderately low-low at the Post-Mason Sts. intersection.

IV. MITIGATION MEASURES

The 3 most undesirable changes in the wind environment due to the presence of the proposed building are: (a) There would be an 86% increase in winds (for the southwesterly wind) at the Post-Mason Sts. intersection. This would increase the winds from low to moderately low. (b) There would be a doubling of winds (for the westerly wind) on Post St. directly south of the proposed building. This would increase the winds from low to moderately low. (c) There would be a 56% increase in winds (for the westerly wind) at the Sutter-Mason Sts. intersection. This would increase the winds from moderately low to moderate. Mitigating measures that should reduce pedestrian discomfort along Post and Mason Sts. adjacent to the proposed building would be the placement of street-level structures that could function as windbreaks along the sidewalks. They could include, but are not limited to, mature street trees, flower vendors, telephone booths, kiosks for newspapers, street-side glass wall structures, or low (10 - 15 ft. high) streetside planters along Post and Mason Sts. and around the intersections at Post-Mason Sts. and Sutter-Mason Sts.

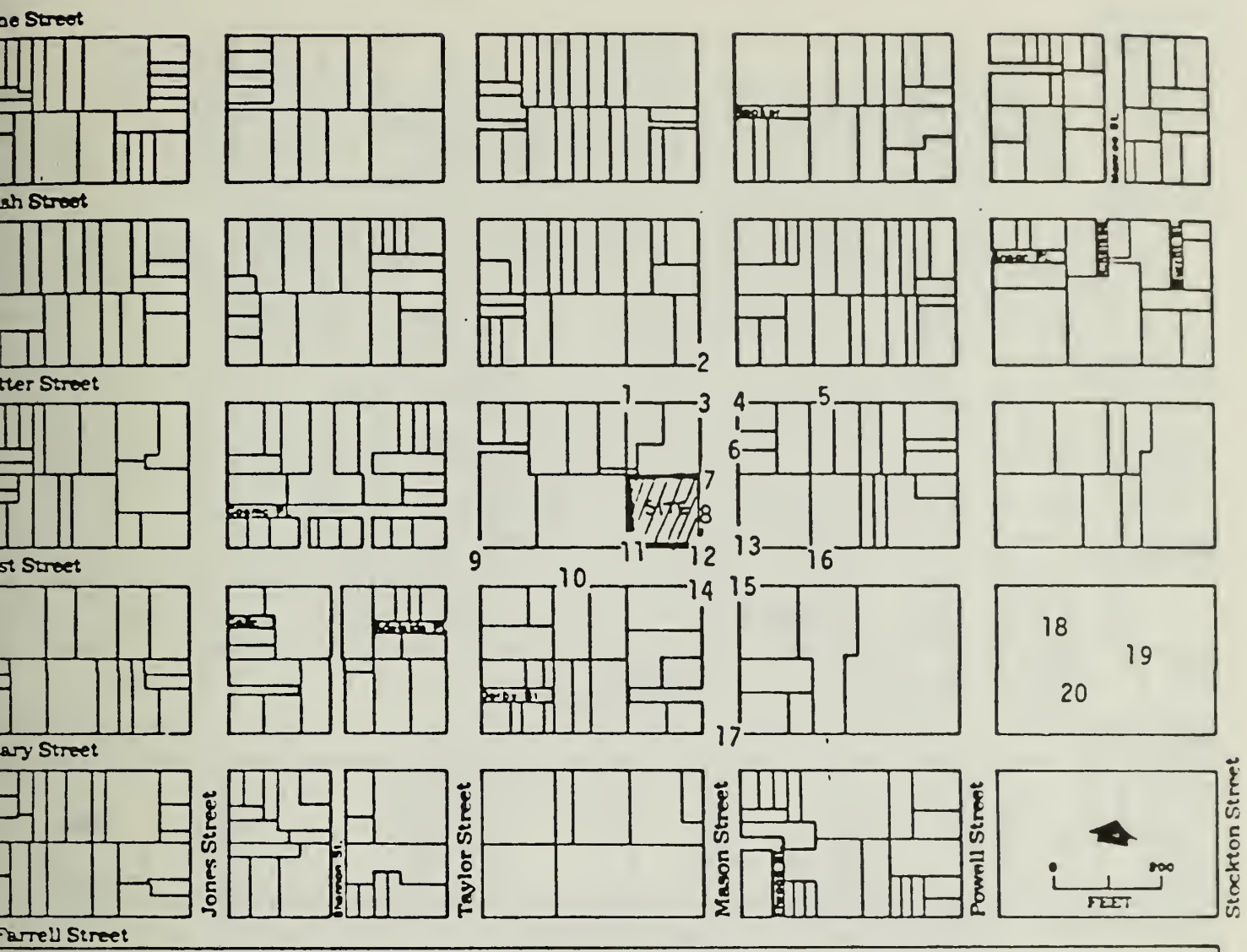


FIGURE B-1: Location of Near Surface Position for Wind-Speed Measurements

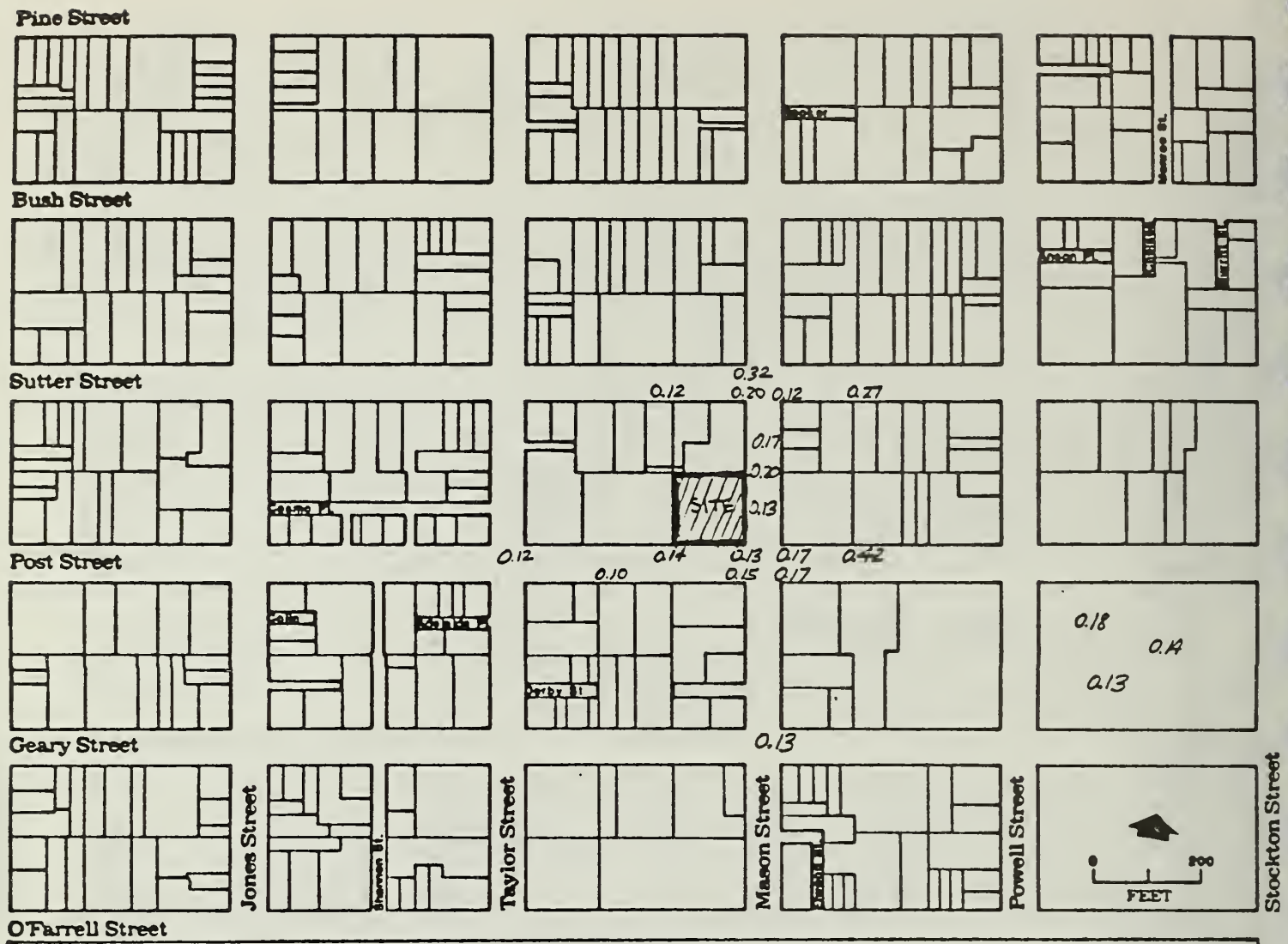


FIGURE B-2: Wind Speed Ratios for Westerly Winds - Existing Setting

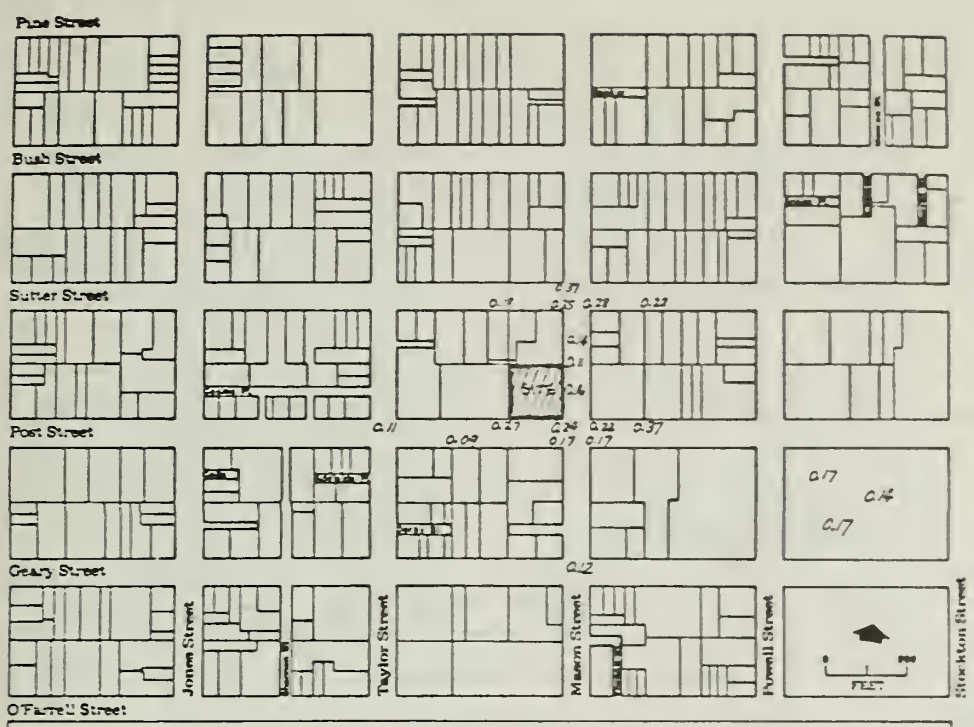


FIGURE B-3: Wind Speed Ratios for Westerly Winds - Proposed Setting

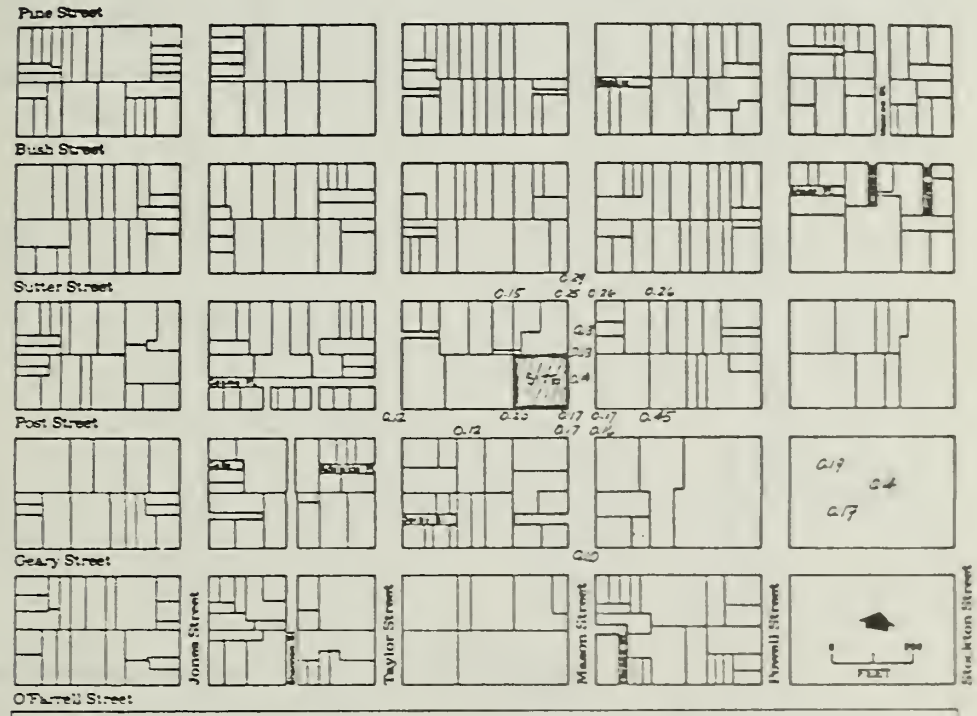


FIGURE B-4: Wind Speed Ratios for Westerly Winds - Alternative Setting

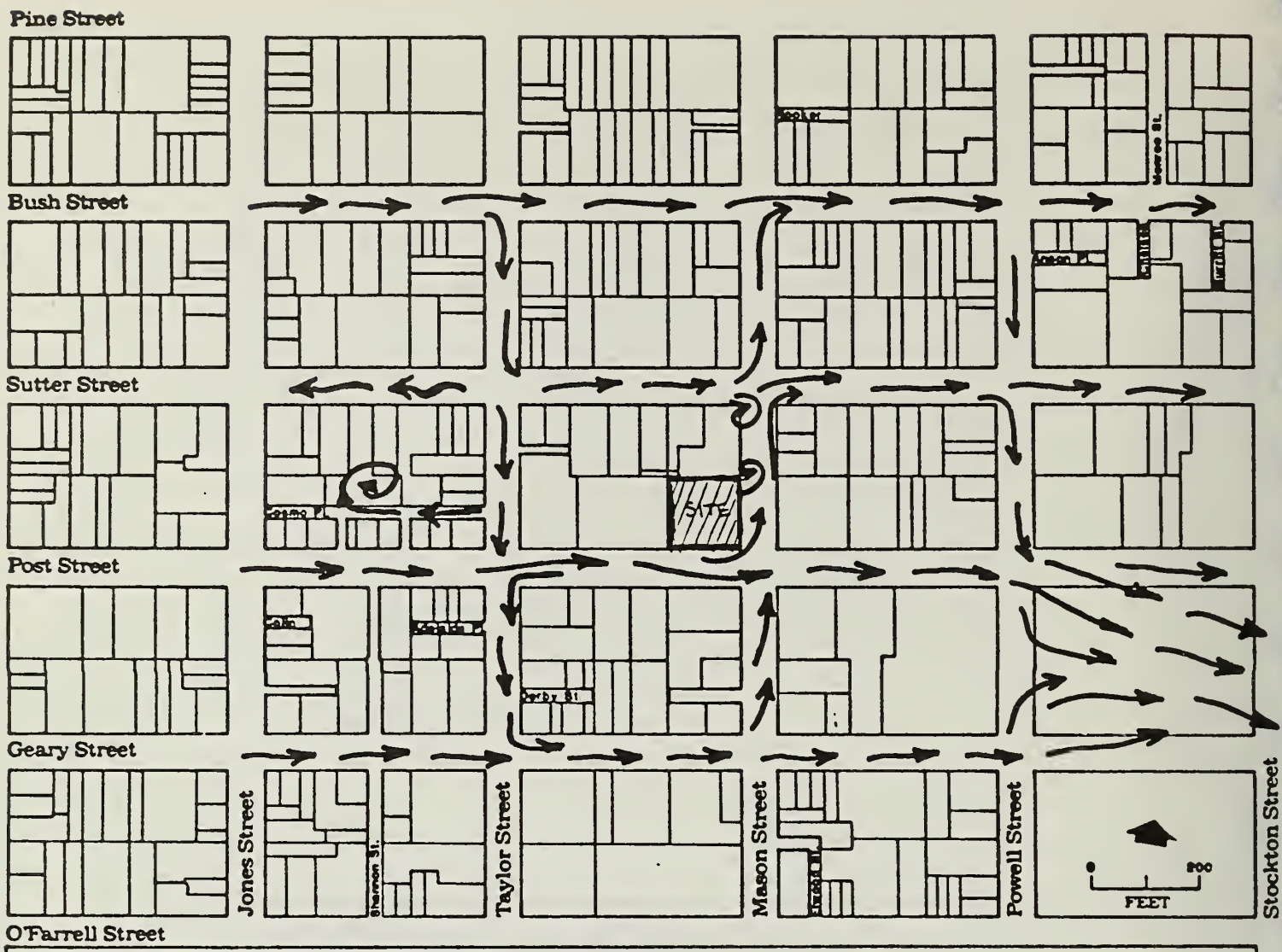


FIGURE B-5: Near Surface Wind Directions for Westerly Winds - Existing Setting

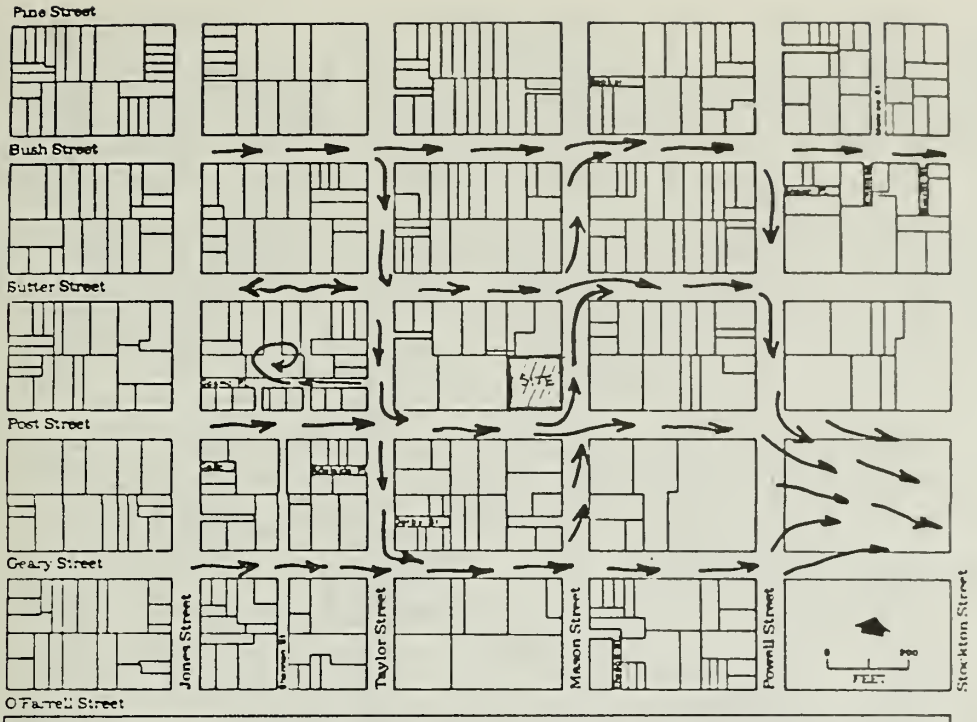


FIGURE B-6: Near Surface Wind Directions for Westerly Winds - Proposed Setting

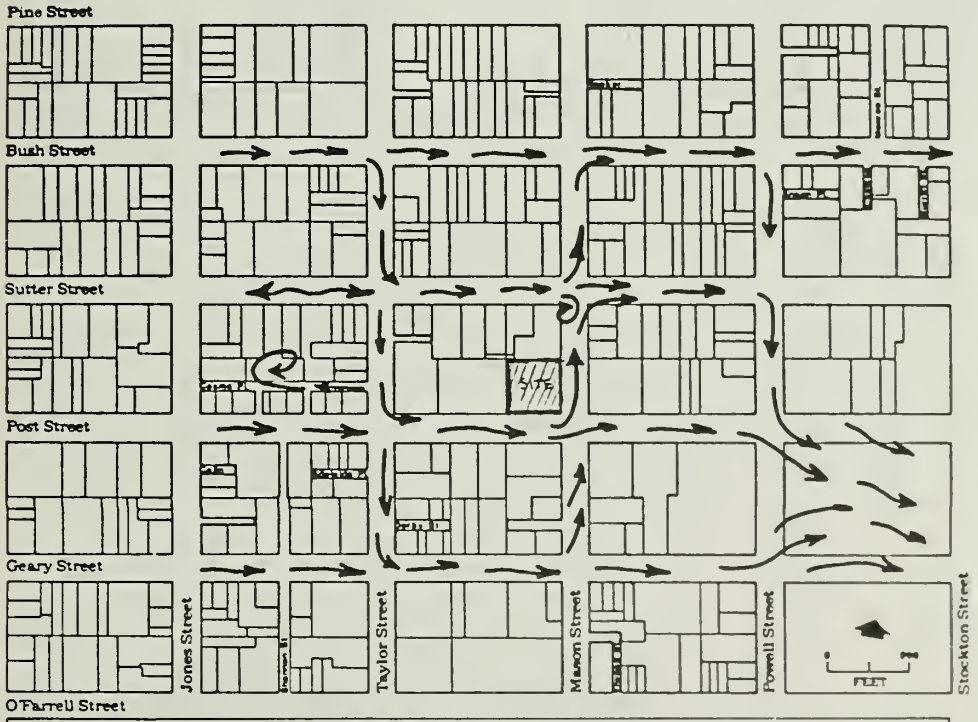


FIGURE B-7: Near Surface Wind Directions for Westerly Winds - Alternative Setting

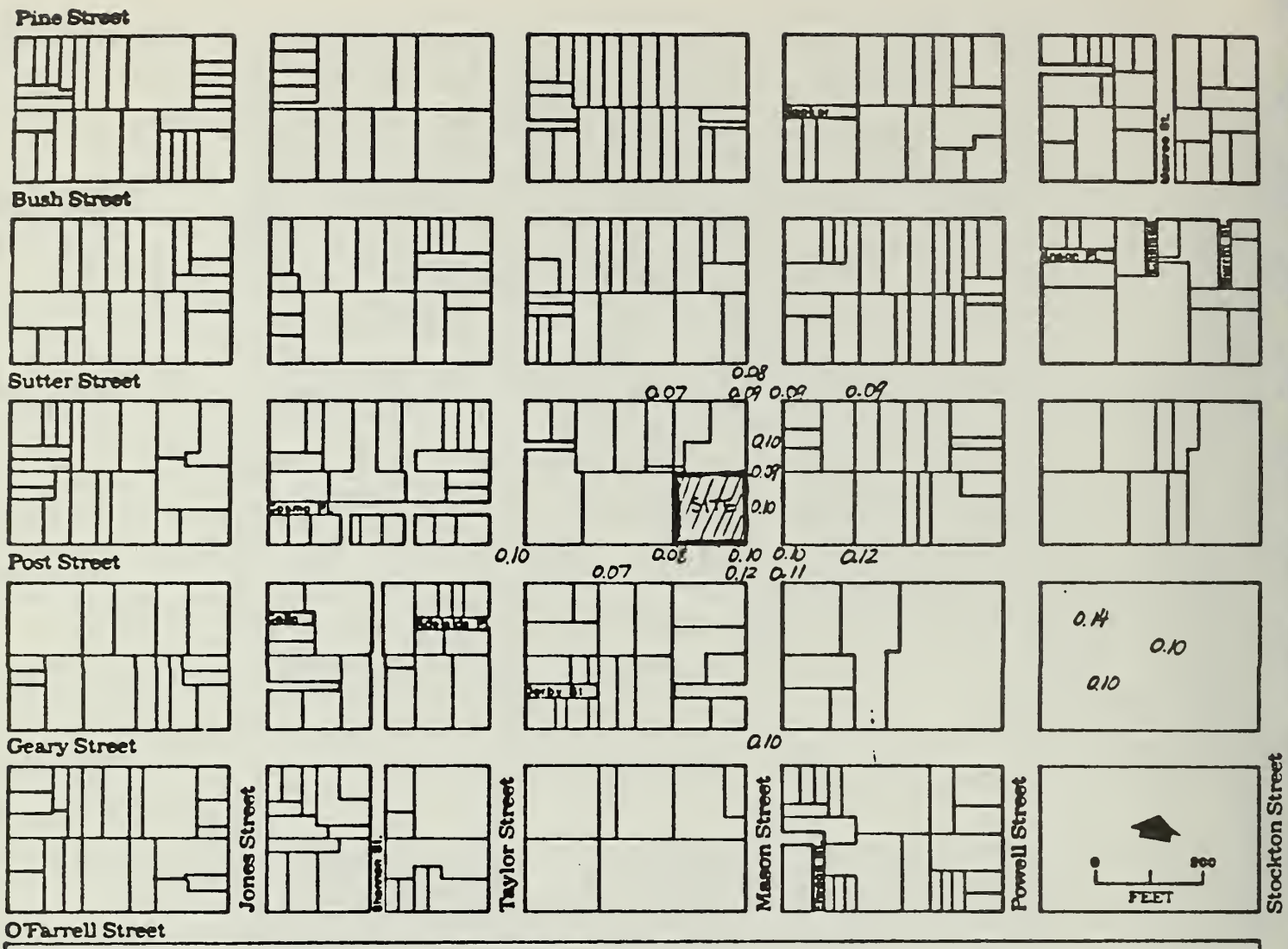


FIGURE B-8: Wind Speed Ratios for Northwesterly Winds - Existing Setting

FIGURE B-9: Wind Speed Ratios for Northwesterly Winds - Proposed Setting

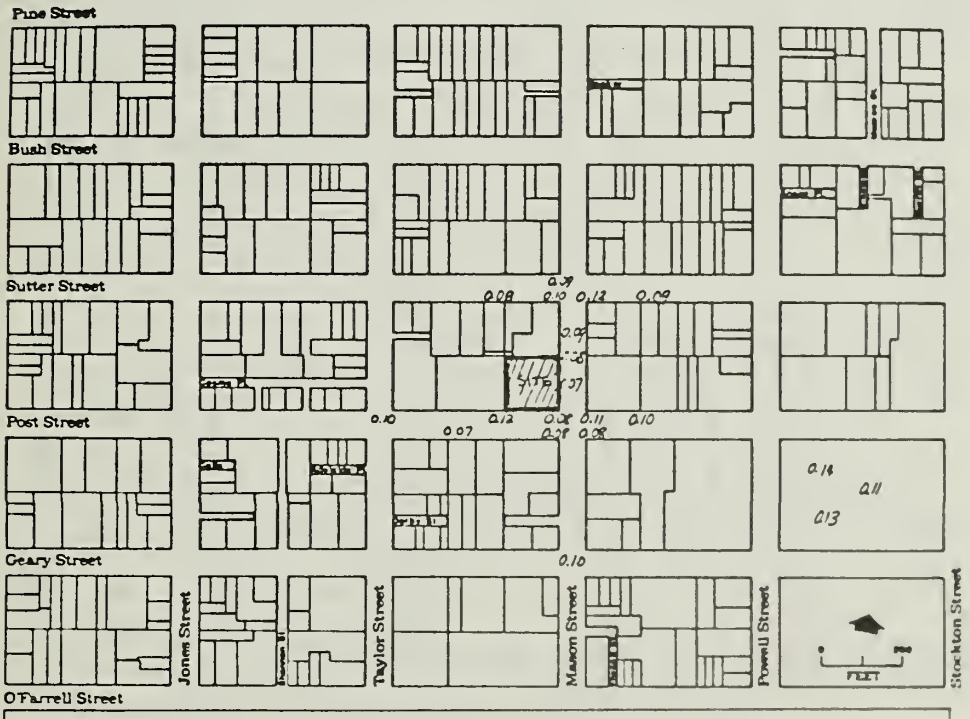


FIGURE B-10: Wind Speed Ratios for Northwesterly Winds - Alternative Setting

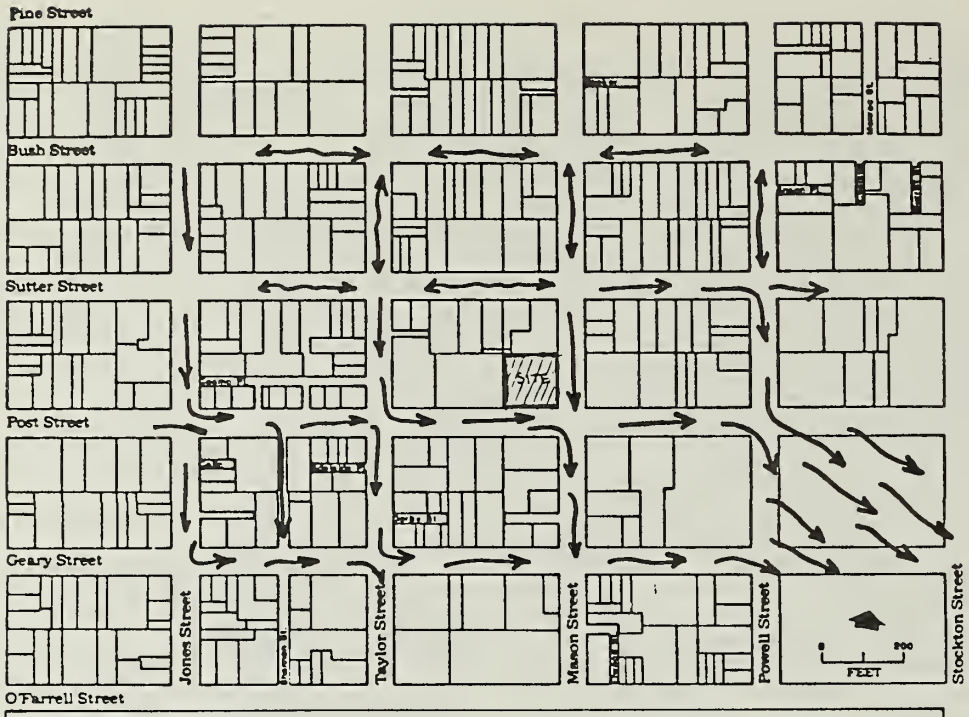


FIGURE B-11: Near Surface Wind Directions for Northwesterly Winds - Existing Setting

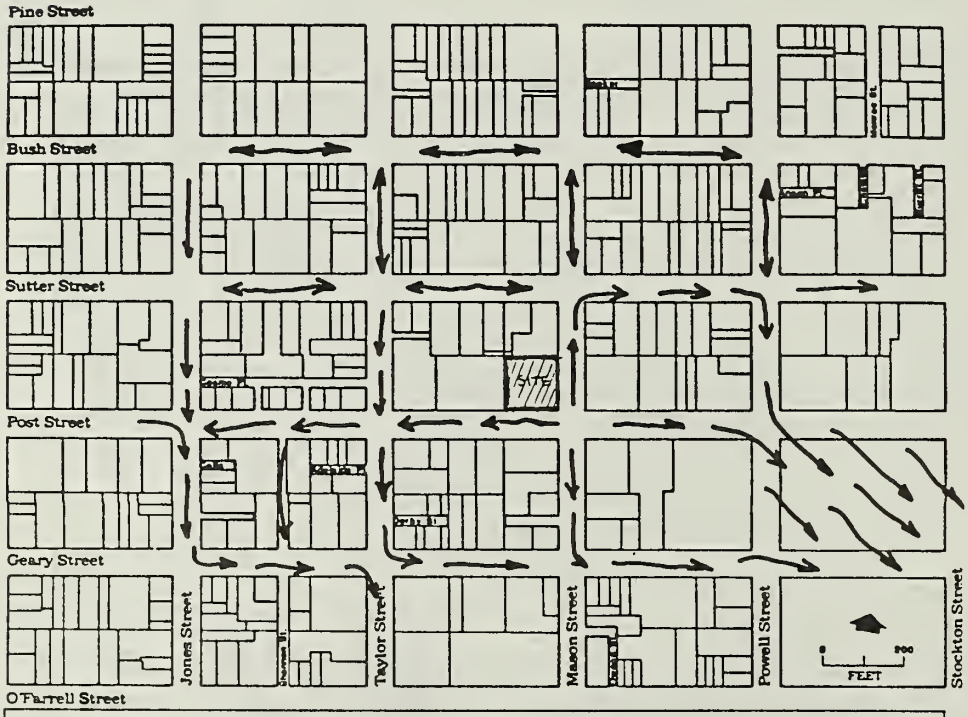


FIGURE B-12: Near Surface Wind Directions for Northwesterly Winds - Proposed and Alternative Settings

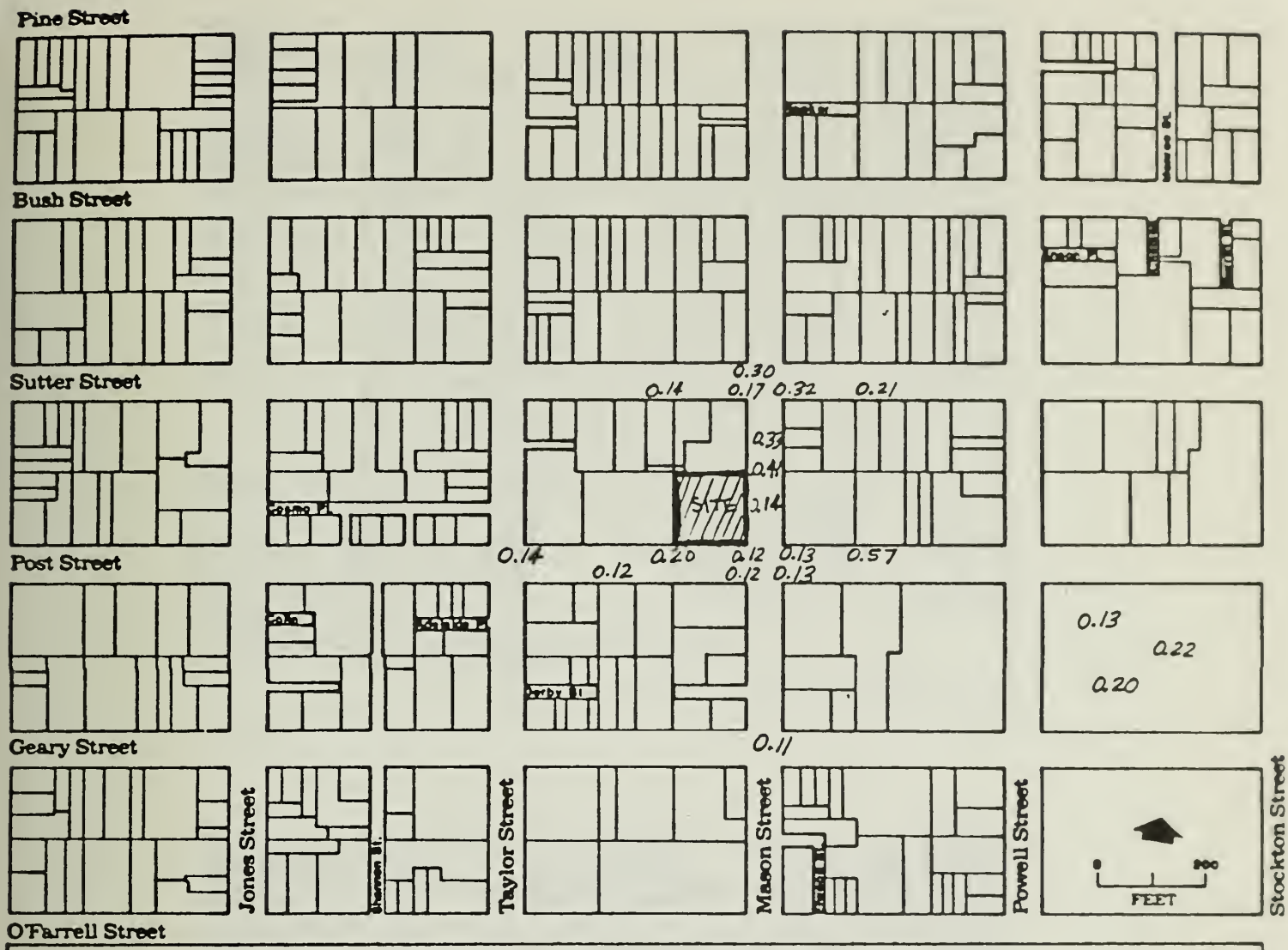


FIGURE B-13: Wind Speed Ratios for Southwesterly Winds - Existing Setting

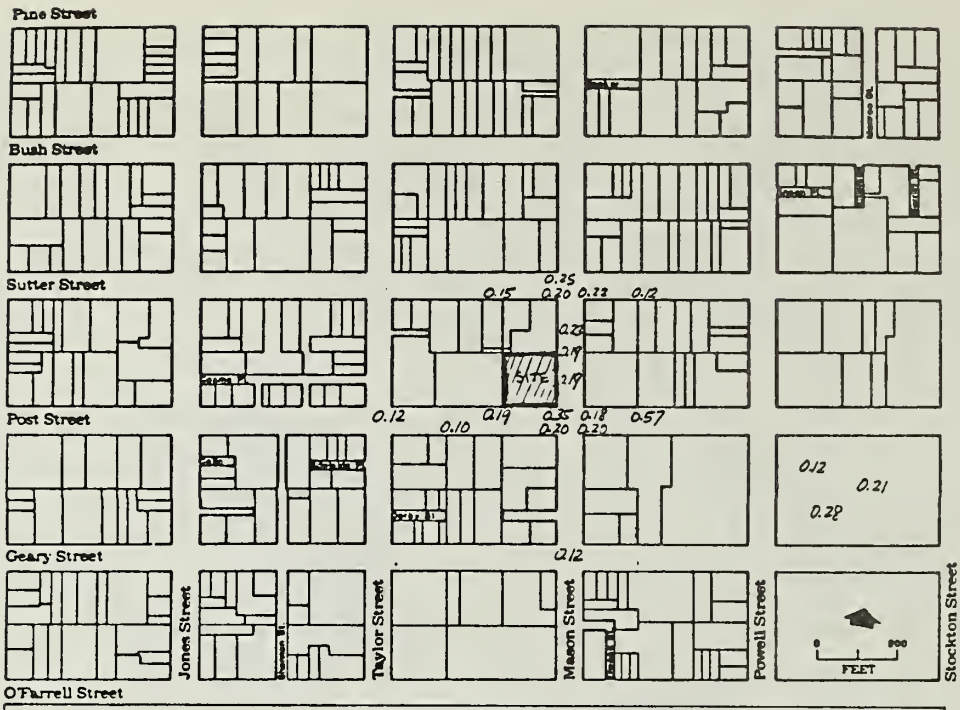


FIGURE B-14: Wind Speed Ratios for Southwesterly Winds - Proposed Setting

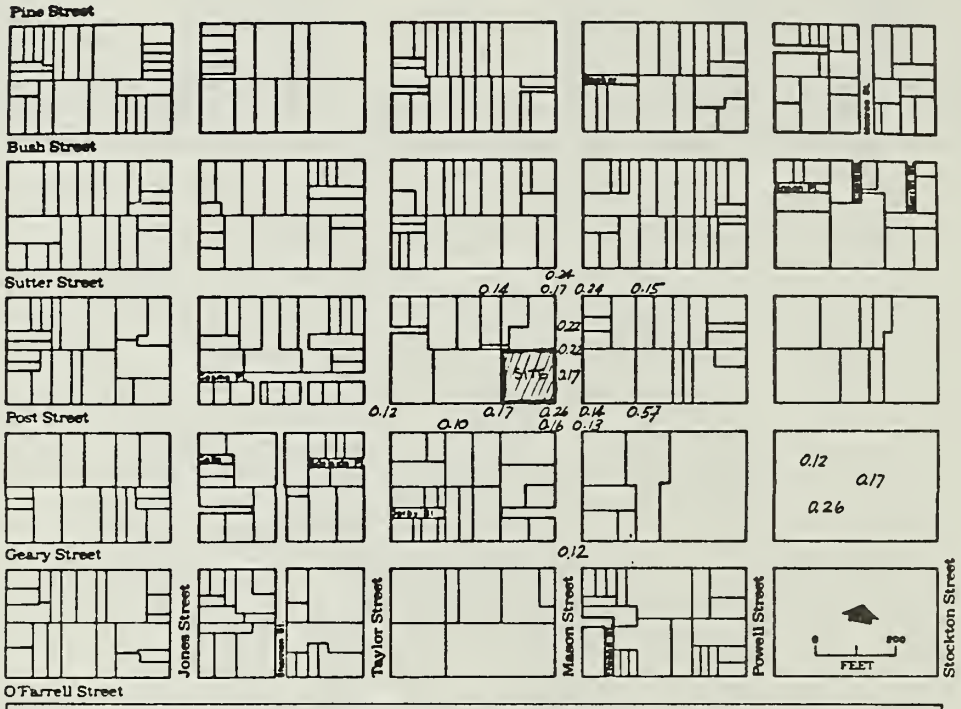


FIGURE B-15: Wind Speed Ratios for Southwesterly Winds - Alternative Setting

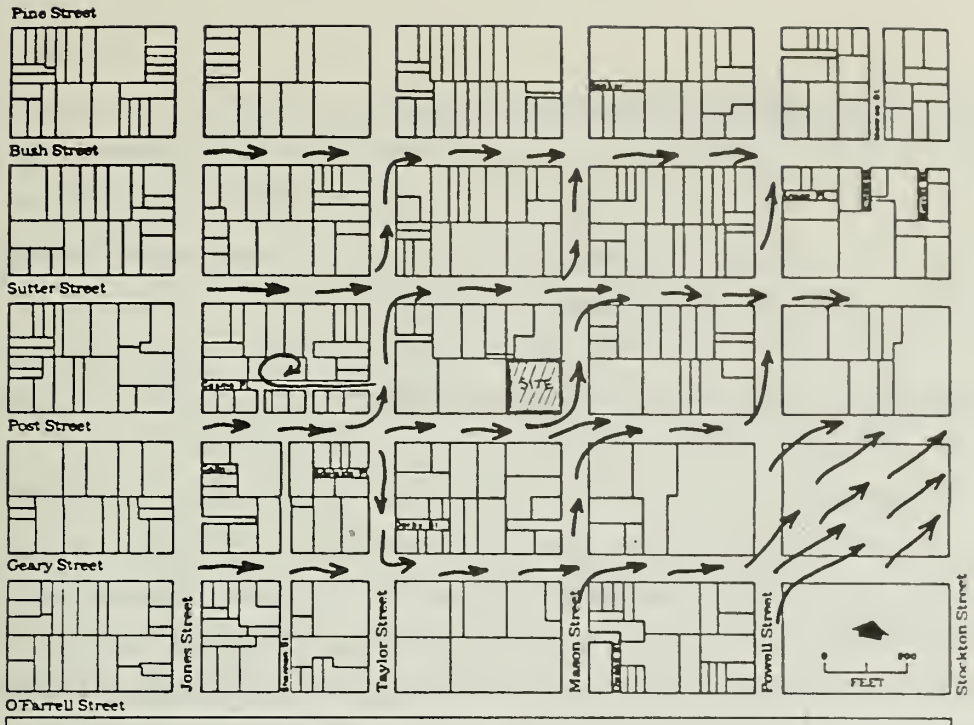


FIGURE B-16: Near Surface Wind Directions for Southwesterly Winds - Existing Setting

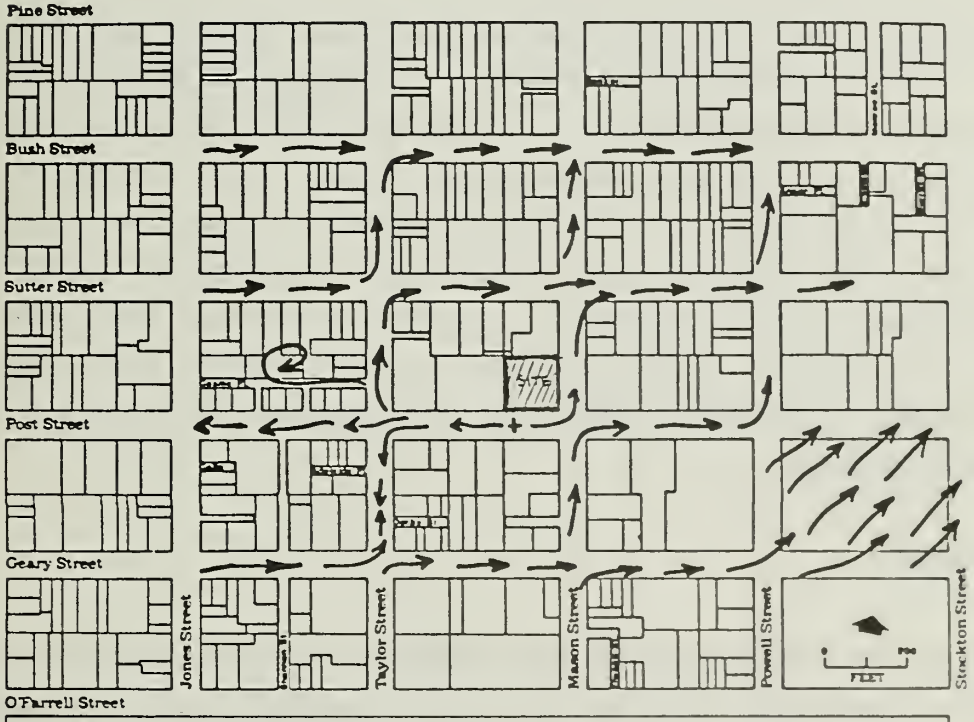


FIGURE B-17: Near Surface Wind Directions for Southwesterly Winds - Proposed and Alternative Settings

APPENDIX C: ARCHITECTURAL EVALUATION SYSTEMS

The architectural ratings discussed in the text of this report represent the results of two separate architectural surveys.

SAN FRANCISCO DEPARTMENT OF CITY PLANNING SURVEY

Between 1974 and 1976, the San Francisco Department of City Planning conducted a citywide inventory of architecturally significant buildings. An advisory review committee of architects and architectural historians assisted in the final determination of ratings for the 10,000 buildings which were entered in an unpublished 60-volume record of the inventory. The rated buildings have been represented on a set of color-coded maps which identify the location and relative significance of each building surveyed. The maps are available for public inspection at the Department of City Planning.

The inventory assessed the architectural significance of the surveyed structures from the standpoint of overall design and particular design features. Both contemporary and older buildings were included, but historical associations were not considered. Each building was numerically rated according to its overall architectural significance. The ratings ranged from a low of "0" to a high of "5". Factors considered included architectural significance, urban design context, and overall environmental significance. The architectural survey resulted in a listing of the best 10% of San Francisco's buildings. In the estimation of the inventory participants, buildings rated "3" or better represent approximately the best 2% of the City's architecture.

HERITAGE SURVEY

More recently, the Foundation for San Francisco's Architectural Heritage, through its consultants, Charles Hall Page & Associates, Inc., conducted an architectural and historical survey of all Downtown structures. In 1979, the inventory results were published in the book Splendid Survivors. Criteria considered in rating the buildings included Architectural Significance,

Historical/Cultural Significance, Environmental Significance and Negative Alterations. Summary ratings from "A" to "D" were then assigned to each building on the basis of these scores. The summary ratings indicate the following:

A. Highest Importance. Individually, these buildings are the most important buildings in downtown San Francisco. All "A" group buildings are eligible for the National Register and are of highest priority for City Landmark status.

B. Major Importance. This group includes buildings which are of individual importance by virtue of architectural, historical, and environmental criteria. "B" group buildings are eligible for the National Register and are of secondary priority for City Landmark status.

C. Contextual Importance. Buildings which are distinguished by their scale, materials, compositional treatment, cornice and other features are included in this group. Many "C" group buildings may be eligible for the National Register as part of historic districts.

D. Minor or No Importance. Buildings in this group are insignificant examples of architecture. Most "D" group buildings are "sites of opportunity" for development.

APPENDIX D - CUMULATIVE OFFICE DEVELOPMENT

Additional ridership from the projected 17.3 million gross sq. ft. of net new cumulative office development and the 0.5 million sq. ft. of net new retail development in San Francisco would cause demand on most of the affected Muni lines to exceed existing capacity. This would also be the case for BART transbay, Southern Pacific, and SamTrans. As the cumulative demand increases, the length of time of peak loadings would increase, spreading peak-of-the-peak conditions over time. Some lines operate only during heavy demand periods (for example, express service for 1 to 2 hours during peak periods), so additional capacity may not be available to allow spreading over time without adding more runs. Additional runs may not require increases in vehicle fleet size, as the additional runs would be extending the peak period level of service over a longer period of time, but would increase operating and maintenance costs.

With 5-year plan improvements, most agencies could meet the demand without a serious reduction in service. The most notable exception is Muni, which now has an estimated load factor of 0.91, and which would have an estimated load factor of 1.20 with cumulative development and with 5-year plan improvements in place. This increase in load factor would represent an average of 20 additional persons on each bus and 64 on light rail vehicles (LRV) above existing loadings. If any element of the Muni 5-year plan (which would increase capacity by 18%) is not realized, loading increases would be greater.

If existing funding continued and proposed expansion occurred, BART is projecting a peak hour capacity of 16,500 seats transbay (eastbound) and 11,000 seats westbay (westbound). Recommended maximum capacity would be 24,750 and 16,500 respectively. Average loadings, including ridership from the projected 17.3 million gross sq. ft. of net new cumulative development, would not be over capacity with the anticipated 5-year plan capacity. AC Transit does not have any increases proposed for its transbay service and would therefore be operating at 101% of this recommended maximum capacity with the cumulative demand. SamTrans is proposing to have a capacity of between 4,800 and 5,000 seats per hour on is San Francisco routes. Recommended maximum capacity would be 6,250 riders. Average future loadings on SamTrans would be under seated capacity when the anticipated capacity becomes available. Southern Pacific/CalTrain has no proposals to increase seated capacity, but station improvements, including additional parking, are proposed. Southern Pacific would therefore operate in excess of its recommended maximum capacity with the cumulative demand. Golden Gate Transit is proposing to increase peak period (6-10 a.m.) motor coach capacity by 25% over existing levels and to increase ferry service by adding another Larkspur Ferry (an increase of about 70% over existing service). Average future loadings (including the cumulative demand) on Golden Gate Transit would not exceed capacity when the proposed additions become available.

TABLE D-1: CUMULATIVE OFFICE DEVELOPMENT IN DOWNTOWN SAN FRANCISCO AS OF JANUARY 27, 1983

Assessor's Block	Case No.	Project Name	Office (Gross Sq. Ft.) Total New Constr.	Office (Gross Sq. Ft.) Net New Constr.	Retail (Gross Sq. Ft.) Total New Constr.	Retail (Gross Sq. Ft.) Net New Constr.
		Downtown Office Projects Under Formal Review				
110	82.129E	Embarcadero Terraces	142,000	142,000	3,000	3,000
112	81.258	Ice House Conversion(C)*	209,000	209,000		
113	82.418E	1171 Sansome	30,000	30,000		
136	81.245	955 Front at Green	50,000	50,000		
176	81.673EACV	Columbus/Pacific Savoy	49,000	49,000	22,000	22,000
176	82.368ED	900 Kearny	25,000	25,000	5,000	5,000
228	81.610ED	569 Sacramento (C)	19,000	19,000		
269	81.132ED	Russ Tower Addition	392,900	392,900	13,000	13,000
288	81.687ED	222 Kearny/Sutter	269,400	202,400	10,000	-8,400
331	81.448E	Mixed Use Development	218,600	207,600	44,700	19,700
669	81.667ED	1361 Bush (C)	45,720	45,720		
716	81.581ED	Polk/O'Farrell	61,600	61,600	22,400	22,400
814	81.540E	101 Hayes	126,000	126,000	6,000	6,000
816	82.212E	300-350 Gough	16,000	16,000		
834	82.603E	25 Van Ness (addition)	42,000	42,000		
3702	81.549ED	1145 Market	137,500	108,500	8,000	8,000
3707	81.245C	New Montgomery Pl.	231,500	217,400	2,200	-3,900
3708	81.493ED	71 Stevenson	324,600	324,600	6,200	6,200
3717	81.183E	123 Mission	342,800	342,800		
3733	82.29E	832 Folsom	50,000	50,000		
3750	82.241E	600 Harrison at Second	228,000	228,000	10,000	10,000
3750	82.77E	642 Harrison (C)	54,400	45,900		
3760	81.386	401 6th	7,000	7,000		
3763	82.384EV	400 2nd at Harrison	71,500	49,500		
3778	81.630ED	548 5th/Brannan	250,000	250,000		
3786	82.33E	655 5th/Townsend	126,250	126,250		
3788	82.352EV	640 2nd	39,100	37,400		
3789	82.31EV	615 2nd/Brannan (C)	106,000	106,000		
9900	81.63	Ferry Building Rehab	308,000	96,000	150,000	124,000
TOTAL UNDER FORMAL REVIEW			3,972,870	3,607,570	302,500	227,000

(continued)

Table D-1, continued

Assessor's Block	Case No.	Project Name	Office (Gross Sq. Ft.) Total New Constr.	Office (Gross Sq. Ft.) Net New Constr.	Retail (Gross Sq. Ft.) Total New Constr.	Retail (Gross Sq. Ft.) Net New Constr.
		Approved Downtown Office Projects				
58	82.234E	Roundhouse	45,000	45,000	3,000	3,000
141		100 Broadway	13,000	13,000		
143		1000 Montgomery (C)	39,000	39,000		
161	80.191	Mirawa Center	36,000	36,000	30,650	30,650
164	81.631D	847 Sansome	23,750	23,750		
164	81.573D	50 Osgood Place	22,500	22,500	9,100	9,100
166	80.15	750 Battery	105,400	105,400	12,800	12,800
240	81.705ED	580 California/Kearny	329,500	260,000	6,500	6,500
261	81.249ECQ	333 California	640,000	466,500	15,500	15,500
262	81.206D	130 Battery	41,000	41,000		
265	81.195ED	388 Market at Pine	234,500	85,500	10,000	-8,500
267	81.241D	160 Sansome	2,200	2,200		
268	81.422D	250 Montgomery at Pine	105,700	65,700	8,000	8,000
270	81.175ED	466 Bush	86,700	86,700	7,800	2,200
271		582 Bush	18,900	18,900		
288	81.461EC	333 Bush (Campeau)	498,400	458,100	20,900	20,900
294	82.870	44 Campton Place	7,600	7,600		
311	82.120D	S.F. Federal	246,800	218,850	1,600	-9,440
834	82.603E	25 Van Ness (C)	101,600	101,600	36,400	36,400
3512	82.14	Van Ness Plaza	170,000	170,000	6,000	6,000
3518	81.483V	291 10th St.	25,700	25,700		-25,700
3705	80.315	Pacific III Apparel Mart	332,400	332,400		
3707	81.492ED	90 New Montgomery	124,300	124,300	3,350	3,350
3709	81.113ED	Central Plaza	353,100	136,300	17,400	17,400
3715	82.16EC	121 Steuart	33,200	33,200		
3722	81.417ED	144 Second at Minna	30,000	30,000		
3724	81.102E	Holland Ct. (C)	27,850	27,850		
3729	82.860	774 Tehama	5,800	5,800		
3732	81.548DE	466 Clementina (C)	15,150	15,150		
3733	81.2	868 Folsom	65,000	65,000		
3735	80.106	95 Hawthorne (C)	61,900	61,900		
3738	DR85	315 Howard	294,000	294,000	3,200	3,200
3741	82.203C	201 Spear	229,000	229,000	5,200	5,200
3749	81.18	Marathon - 2nd & Folsom	681,700	681,700	39,300	39,300
3752	77-220	Office Bldg. (YBC SB-1)	11,000	11,000		
3763	81.287V	490 2nd at Bryant (C)	40,000	40,000		
3763	81.381	480 2nd at Stillman (C)	35,000	35,000		
3775	81.147V	338-340 Brannan (C)	36,000	36,000		
3776	81.59	Welsh Commons	55,600	55,600	12,000	12,000
3776	81.693EV	539 Bryant/Zoe	63,000	63,000		
3787	81.306	252 Townsend at Lusk	81,900	81,900		
3788	81.296Z	690 2nd/Townsend (C)	16,600	16,600	16,000	16,000
3789	81.552EV	625 2nd/Townsend (C)	157,000	157,000		
3794	81.569EV	123 Townsend	104,000	49,500		
3794		155 Townsend	19,000	19,000		
3803	81.244D	China Basin Expansion	196,000	196,000		
TOTAL APPROVED 203,860				5,861,750	5,090,200	264,700

(continued)

Table D-1, continued

Assessor's Block	Case No.	Project Name	Office (Gross Sq. Ft.) Total New Constr.	Office (Gross Sq. Ft.) Net New Constr.	Retail (Gross Sq. Ft.) Total New Constr.	Retail (Gross Sq. Ft.) Net New Constr.
		Downtown Office Projects Under Construction				
106	81.415ED	1299 Sansome	41,000	41,000	3,500	3,500
227	80.296	Bank of Canton	230,500	177,500		-800
163	81.1	901 Montgomery	63,000	63,000	18,800	18,800
164	81.251D	936 Montgomery	21,500	11,500		
166	CU81.7	222 Pacific at Front(C)	142,000	142,000		
167		Golden Gateway III	103,000	103,000		
196		736 Montgomery	40,000	40,000		
196	CU79.49	Pacific Lumber Co.	92,000	92,000		
206	81.165D	401 Washington/Battery	13,200	13,200	1,800	1,800
208	81.104EDC	Washington/Montgomery	235,000	233,300	4,000	-1,200
237	DR80.6	353 Sacramento (Daon)	277,000	251,000	8,300	-2,000
239	DR80.1	456 Montgomery	160,550	160,550	24,250	24,250
240	DR80.16	550 Kearny	71,400	71,400		
263	CU79.12	101 California	1,265,000	1,257,000	24,700	-14,300
271	81.517	453 Grant	27,500	27,500	6,200	6,200
287	81.550D	Sloane Building (C)	125,300	125,300	30,000	30,000
288	DR80.24	101 Montgomery	264,000	234,000	5,900	-14,100
289	81.308D	One Sansome	603,000	603,000	7,000	7,000
292	DR79.13	Crocker National Bank	676,000	495,000	86,000	54,000
312	79.370	50 Grant	90,000	90,000		
351	79.133	U.N. Plaza	92,050	92,050		
351	DR79.24	Mardikian/1170 Market	40,000	40,000		
672		Wealth Investments	104,500	104,500		
738		One Flynn Center	25,000	25,000		
762		Opera Plaza	50,000	50,000		
3702	81.25	1155 Market/8th	138,700	138,700	8,800	8,800
3708	80.34	25 Jessie/Ecker Square	111,000	111,000		
3709	80.36	Five Fremont Center	791,200	722,200	35,000	17,300
3712	79.11	Federal Reserve Bank	640,000	640,000		
3715		141 Steuart	80,000	80,000		
3717	79.236	101 Mission at Spear	219,350	219,350		
3717		150 Spear	330,000	330,000		
3717	82.82D	135 Main	260,000	260,000	4,000	4,000
3717	80.349	Spear/Main (160 Spear)	279,000	279,000	7,600	7,600
3718	79.12	Pacific Gateway	540,000	540,000	7,500	7,500
3724		Yerba Buena West	335,000	335,000		
3735		Convention Plaza	339,000	339,000		
3735		Planter's Hotel (C)	20,000	20,000		
TOTAL UNDER CONSTRUCTION			8,935,750	8,557,050	283,350	158,350
GRAND TOTAL (ALL PROJECTS)			18,770,370	17,254,820	850,550	589,210

* (C) - Conversion (generally industrial and/or warehouse to office)

SOURCE: Department of City Planning.

TABLE D-2: GROSS SQUARE FEET OF CUMULATIVE OFFICE AND RETAIL DEVELOPMENT* IN DOWNTOWN SAN FRANCISCO AS OF JANUARY 27,1983

	Office (Gross Sq. Ft.)		Retail (Gross Sq. Ft.)	
Status of Project	Total New Constr.	Net New Constr.	Total New Constr.	Net New Constr.
Under Formal Review	3,972,870	3,607,570	302,500	227,000
Approved	5,861,750	5,090,200	264,700	203,860
Under Construction	8,935,750	8,557,050	283,350	158,350
GRAND TOTALS	18,770,370	17,254,820	850,500	589,210

* Includes all office projects in the greater downtown area and the South of Market area for which a Preliminary Draft EIR has been submitted to the City for review or for which plans are well defined, and all office projects in redevelopment areas that are under construction or for which Land Disposition Agreements have been approved. It does not include projects in the Rincon Point - South Beach or Yerba Buena Center Redevelopment Areas for which no Land Disposition Agreements have been approved by the San Francisco Redevelopment Agency Commission, as it is not possible to know what development will be approved in these areas. It does not include Mission Bay as no formal proposal has been submitted to the City and the project is still in early planning stages.

SOURCE: Department of City Planning.

CUMULATIVE IMPACT ANALYSIS METHODOLOGY

Travel Demand

Travel demand from the 17.3 million gross sq. ft. of net new cumulative office development and 0.6 million gross sq. ft. of net new cumulative retail development in downtown San Francisco has been estimated using a land-use approach for trip generation. Future travel into the downtown has been assumed to be a result of construction and occupancy of downtown office and retail space. The Office of Environmental Review of the Department of City Planning (DCP) has identified office projects in the greater downtown area as being under formal review, approved or under construction. Table D-1 shows the list of projects separated by review status and includes Assessor's Block number and DCP case number for each project. Table D-2 contains the total gross sq. ft. of office and retail space for each review status category. The information contained in these tables represents the best data available from the Department of City Planning at the time of preparation of this document.

The list of projects shown in Table D-1 and the development totals shown in Table D-2 include all office projects in the greater downtown area and the South of Market area that are under construction or have been approved, and all projects for which a Preliminary Draft EIR has been submitted to the City for review or for which plans are well defined, and all office projects in redevelopment areas that are under construction or for which Land Disposition Agreements have been approved by the San Francisco Redevelopment Agency Commission. Projects that were not definitive and/or appear to be inactive or withdrawn by the project sponsor were not included in the cumulative analyses.

Table D-3 shows hotels proposed, approved, and under construction in downtown San Francisco. As shown in Table D-4, these hotels would generate about 800 vehicle trip ends in the p.m. peak hour (representing but 5% of the peak hour vehicular traffic to be generated by new office development). Demand for new taxi and tour bus use may require expansion of the number of these vehicles operating in downtown.

Residential projects have not been included because residential travel in the downtown is generally in the contra-commute direction during peak-hours and because the office trip generation rate and modal split distribution are predicated on the assumption that housing would be available in the City. Thus inclusion of residential projects would be double counting of project generated travel.

Two redevelopment areas (Yerba Buena Center and Rincon Point - South Beach) and 1 private development (Mission Bay) are located in or near the greater downtown area. In the redevelopment areas the majority of building sites do not yet have Land Disposition Agreements (LDA) approved. Until such time as specific LDA's are approved, no estimate of travel demand can be made (thus, parcels for which no LDA exists have not been included in the cumulative analyses). Development in the Yerba Buena Center (YBC) Redevelopment Area will be in accordance with the YBC Redevelopment Plan, as amended. Possible land uses that would be in accordance with the Yerba Buena Center Redevelopment Area Plan include commercial entertainment, convention facility (in place), cultural, downtown support service, exhibit/ballroom space, hotel rooms, institutional, light industry, market-rate dwelling units, subsidized dwelling units, office, park or plaza, pedestrian concourse, parking, and retail./3/ Possible land uses in the Rincon Point - South Beach Redevelopment Area include hotel, housing, office, open space, public parking, retail, and warehouse uses./4/ Mission Bay has not been included in the cumulative analyses as no application has been submitted to the City and it is uncertain what formal proposal may be made.

Existing office and retail space that would be replaced by new buildings was subtracted from the proposed new construction to better approximate the impacts the new buildings would have on transportation facilities. As shown in Table D-2, net new office and retail space is less than total new construction as a result of subtracting out existing office and retail space on sites proposed for new buildings. ("Net new" space is used to refer to the amount of new construction in excess of existing space on each site in terms of gross sq. ft. of floor space. It does not refer to net leasable or net rentable floor space).

TABLE D-3: CUMULATIVE HOTEL DEVELOPMENT IN DOWNTOWN SAN FRANCISCO

Assessor's Block	Project Name	Rooms
	PROJECTS UNDER FORMAL REVIEW	
297	Post/Mason*	350
331	Mason Tower (AB 331)	455
	APPROVED	
325	Hilton Tower No. 2	410
326	Holiday Inn - Mason St.	805
742	790 Van Ness at Eddy	125
3701	Holiday Inn - 8th St.	225
	UNDER CONSTRUCTION	
330	Ramada	1,040
3706	Meridien	700
		4,110

* The project under analysis in this document.

SOURCE: Environmental Science Associates, Inc.

Estimates of future travel have been made using trip generation rates of 17.5 person trip ends (1 way trips) per 1,000 net leasable sq. ft. of net new office space and 100 person trip ends (pte) per 1,000 gross sq. ft. of net new retail space./1/ Gross sq. ft. of office space was converted to net leasable sq. ft. by assuming an efficiency factor of 80%. The retail space has been assumed to be primarily "ground-floor retail" which would serve the office building users. Based upon survey data collected at the Embarcadero Center, approximately 45% of the travel generated by "ground-floor retail" uses has been assumed to be oriented to the office uses on-site and is already included in the office trip generation rate. Thus, 55% of the retail trip generation has been assumed to be "new" to each site./2/

P.M. peak-hour travel from the cumulative development was assigned to modes of travel based upon the regional distribution and modal split shown in Table D-1. During the p.m. peak hour about 20% of the office travel and 10% of the retail travel was assumed to occur. Of the office travel approximately 90% [during peak-hours] was assumed to be work-related and 10% was assumed to be other travel. On a daily basis, office travel was assumed to be 57% work-related and 43% other travel./5/

TABLE D-4: ESTIMATED CUMULATIVE HOTEL TRAVEL

	24-Hour Total	P.M. Peak Hour
Person trip ends	39,670	3,000
Auto		1,015
Muni		525
BART		210
AC Transit		65
SamTrans		30
Peninsula Train		30
GGT (Bus)		180
Charter or tour bus		330
Other		615
Vehicular trip ends	9,920	790
Auto	5,750	460
Taxi	3,470	275
Charter or tour bus	400	30
Service vehicle	300	25

SOURCE: Environmental Science Associates, Inc.

To calculate vehicle trip ends, average automobile occupancies were assumed for each regional area based upon available data. Currently, commute travel to the East Bay is about 1.8 persons per vehicle; the north Bay is about 1.5 persons per vehicle; and to the Peninsula is about 1.2 persons per vehicle./6/ San Francisco auto occupancy was assumed to be 1.4 persons per vehicle./7/

A basic assumption in all of the transportation analyses is that existing regional distributions and modal splits would continue into the future unchanged. Thus, the implicit assumption has been made that about 40% of the future office employees would live in San Francisco. If housing is not available in the City then a greater impact than noted would result on the commute corridors into the City from the North Bay, East Bay and Peninsula. If housing is not available in the City, however, the impact on the MUNI would be less than noted because City residents are the majority of Muni users.

Long-term parking demand for the 17.3 million gross sq. ft. of net new cumulative office development and 0.6 million gross sq. ft. of net new retail development in the greater downtown area has been calculated to be about 15,600 spaces. Long-term parking demand has been assumed to be distributed over the greater downtown and South of Market areas rather than being concentrated near the proposed project location. A recent survey by the Department of City Planning shows that there are about 37,000 off-street parking spaces in the C-3 district and an additional 6,500 spaces in the area bounded by The

Embarcadero, Folsom, Eighth and Bryant Sts./6/ Based upon average occupancy, about 4,100 spaces are available on a daily basis. The cumulative demand for the whole downtown area would create a theoretical net deficit of 11,500 spaces. Parking demand has been based upon existing travel patterns and is not dependent upon the availability of parking spaces or the ability of the freeway and bridge system to carry the additional demand.

Freeway and bridge capacity into downtown is essentially fixed at existing levels as major construction would be required to add new capacity. Therefore, the net deficit of 11,500 spaces does not mean that 11,500 autos would be driving on City streets in search of parking. Rather, the travel demand represented by the parking deficit would most likely shift to ridesharing or transit. Increased ridesharing would not only reduce parking demand but would also reduce traffic impacts. Increased transit use would add to the demands on the regional and local transit systems, particularly Muni.

The deficit may be less than this estimate as the survey did not inventory parking in the Civic Center area, or the areas west of Eighth St., south of Bryant St. or north of Washington St. The survey did indicate that inside the study area about 6,000 parking spaces have been added since 1967 and approximately 1,400 are proposed to be added (exclusive of 4,845 parking spaces to be provided in Yerba Buena Center).

Imbalances in long-term parking demand and potential supply, given projected cumulative development and demand, would be expected to encourage the use of car pools and van pools, or the creation of satellite (intercept) parking facilities in outlying non-residential areas or in outlying cities, with shuttle or expanded Muni service to the downtown area, or increased use of transit directly for commuters from San Francisco or from suburban centers (East Bay, North Bay, Peninsula). Peninsula residents, for example, could find Southern Pacific commuter trains more attractive if they could get no closer to downtown by car than the train terminal at Fourth and Townsend Sts. All transit options would add to the demands on the regional and local transit systems, however, particularly Muni.

Vehicle travel and parking demand have been based upon demand projections and are unconstrained by the ability of the freeway and bridge system to carry the additional demand. Freeway and bridge capacity into downtown is essentially fixed at existing levels as major construction would be required to add new capacity. Current levels of vehicle traffic on the freeway and bridge system are at or near capacity. Thus, if the projection of person trip ends in autos is assumed to be correct, the levels of vehicle occupancy would have to increase in the future as the freeway and bridge system could not handle an appreciable increase in autos at the peak hour.

If vehicle occupancy were to increase, vehicle trip ends and subsequent parking demand would be less than projected. Alternately, the peak hour level of demand could spread into hours adjacent to the peak hour (as is currently happening). However, there is a finite limit as to how far the peak can spread over time and still allow business to function.

Transit demand has been projected based upon existing travel patterns and is not dependent upon the availability of transit capacity. Two levels of operations (load factor) calculations have been made. One load factor has been calculated based upon existing capacity and is intended to represent conditions that would result if no improvements are made to the transit system. The second load factor is calculated based upon forecast capacity (as defined in each agency's 5-year plan) and is intended to portray conditions that would result if planned, scheduled improvements are made.

TABLE D-5: OFFICE AND RETAIL TRAVEL DISTRIBUTION AND MODAL SPLIT FOR CUMULATIVE ANALYSIS

	OFFICE						RETAIL TRAVEL		
	Work Travel			Other Travel					
Geographic Area	Geog. %*	Mode	%**	Geog. %*	Mode	%**	Geog. %*	Mode	%**
San Francisco									
Downtown/Northeast	7.0	Auto	9.0	33.0	Auto	2.0	84.0	Auto	3.0
(East of Van Ness,		Muni	61.0		Muni	20.0		Muni	7.0
North of Market		BART	1.0		BART	0.0		BART	1.0
to the Embarcadero,		Walk	29.0		Walk	78.0		Walk	89.0
South of Market to 101)									
Northwest	15.0	Auto	31.0	11.0	Auto	15.0	1.0	Auto	10.0
(Richmond, Marina		Muni	69.0		Muni	85.0		Muni	90.0
Western Addition)									
Southwest	13.0	Auto	29.0	13.0	Auto	12.0	2.0	Auto	10.0
(Sunset, Parkside,	Muni		62.0		Muni	69.0		Muni	80.0
Ingleside, Excelsior,		BART	9.0		BART	19.0		BART	10.0
Twin Peaks, and Upper Market)									
Southeast	5.0	Auto	26.0	7.0	Auto	13.0	2.0	Auto	10.0
(Potrero Hill, Bayview,		Muni	52.0		Muni	38.0		Muni	80.0
Hunters Point,		BART	22.0		BART	50.0		BART	10.0
East and South of 101)									
Peninsula	18.0	Auto	44.0	8.0	Auto	50.0	3.0	Auto	25.0
(San Mateo and Santa		Muni	3.0		Muni	0.0		Muni	0.0
Clara Counties)		BART	19.0		BART	30.0		BART	25.0
		SamT	7.0		SamT	10.0		SamT	0.0
		SPRR	27.0		SPRR	10.0		SPRR	50.0
East Bay	30.0	Auto	33.0	20.0	Auto	13.0	6.0	Auto	38.0
(Alameda and Contra		BART	37.0		BART	79.0		BART	62.0
Costa Counties)		A-C	30.0		A-C	8.0		A-C	0.0
North Bay***	12.0	Auto	58.0	8.0	Auto	70.0	2.0	Auto	70.0
(Marin and Sonoma		GGTB	35.0		GGTB	20.0		GGTB	30.0
Counties)		GGTF	7.0		GGTF	10.0		GGTF	0.0

* Percent of travel with origins or destinations in each geographic area.
**Percent of travel in each geographic area using listed mode of travel.
***GGTB stands for Golden Gate Transit Bus; GGTF stands for Golden Gate Transit Ferry.

SOURCE: San Francisco Department of City Planning, TJKM, Environmental Science Associates.

Intersection Analysis

The capacity analysis of each intersection at which a turning movement count was made utilized the "critical lane" method. This method of capacity calculation is a summation of maximum conflicting approach lane volumes that gives the capacity of an intersection in vehicles per hour per lane. (This method is explained in detail in an article entitled "Intersection Capacity Measurement Through Critical Movement Summations: A Planning Tool," by Henry B. McInerney and Stephen G. Peterson, January 1971, Traffic Engineering. This method is also explained in "Interim Materials on Highway Capacity," Transportation Research Circular No. 212, Transportation Research Board, January 1980). The maximum service volume for Level of Service E was assumed as intersection capacity. A service volume is the maximum number of vehicles that can pass an intersection during a specified time period in which operating conditions are maintained corresponding to the selected and specified Level of Service. For each intersection analyzed, the existing peak-hour volume was computed and a volume-to-capacity (v/c) ratio was calculated by dividing the existing volume by the capacity at Level of Service E. Table D-6 shows the definitions of Levels of Service related to v/c ratio.

TABLE D-6: VEHICULAR LEVELS OF SERVICE

Level of Service	Description	Volume/Capacity* v/c Ratio
A	Level of Service A describes a condition where the approach to an intersection appears quite open and turning movements are made easily. Little or no delay is experienced. No vehicles wait longer than 1 red traffic signal indication. The traffic operation can generally be described as excellent.	0.60
B	Level of Service B describes a condition where the approach to an intersection is occasionally fully utilized and some delays may be encountered. Many drivers begin to feel somewhat restricted within groups of vehicles. The traffic operation can be generaly described as very good.	0.61-0.70
C	Level of Service C describes a condition where the approach to an intersection is often fully utilized and back-ups may occur behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so. The driver occasionally may have to wait more than 1 red traffic signal indication. The traffic operation can generally be described as good.	0.71-0.80
D.	Level of Service D describes a condition of increasing restriction causing substantial delays and queues of vehicles on approaches to the intersection during short times within the peak period. However, there are enough signal cycles with lower demand such that queues are periodically cleared, thus preventing excessive back-ups. The traffic operation can generally be described as fair.	0.81-0.90
E	Capacity occurs at level of service E. It represents the most vehicles that any particular intersection can accommodate. At capacity there may be long queues of vehicles waiting up-stream of the intersection and vehicles may be delayed up to several signal cycles. The traffic operation can generally be described as poor.	0.91-1.00
F	Level of Service F represents a jammed condition. Back-ups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration. Hence, volumes of vehicles passing through the intersection vary from signal cycle to signal cycle. Because of the jammed condition, this volume would be less than capacity.	1.00

* Capacity is defined as Level of Service E.

SOURCE: San Francisco Department of Public Works, Traffic Division, Bureau of Engineering, 1965.

TABLE D-7: PEDESTRIAN FLOW REGIMEN

FLOW REGIME	CHOICE	CONFLICTS	FLOW RATE (P/F/M)* Average	Percent of Capacity Used
Open	Free Selection	None	0.5	0.0-3.0
Unimpeded	Some Selection	Minor	0.5-2	3.1-11.0
Impeded	Some Selection	High Indirect Interaction	2-6	11.1-33.0
Constrained	Some Restriction	Multiple	6-10	33.1-56.0
Crowded	Restricted	High Probability	10-14	56.1-78.0
Congested	All Reduced	Frequent	14-18	78.1-100.0
Jammed**	Shuffle Only	Unavoidable		above 100.0

* P/F/M = Pedestrians per foot of effective sidewalk width per minute.
** For Jammed Flow, the (attempted) flow rate degrades to zero at complete breakdown.

SOURCE: Urban Space for Pedestrians, MIT Press, 1975, Cambridge, MA.

NOTES - Appendix D

/1/ Land uses from Final Second Supplement Yerba Buena Center Final Environmental Impact Report, San Francisco Department of City Planning and San Francisco Redevelopment Agency, certified January 4, 1983.

/2/ Land uses from Rincon Point - South Beach Redevelopment Area, San Francisco, California, Final Environmental Impact Report/Environmental Impact Statement, San Francisco Department of City Planning certified November 5, 1980.

/3/ The regional distribution, office trip generation, trip purpose and peak hour percentage are from Attachment 1 of the Guidelines for Environmental Impact Review, Transportation Impacts Department of City Planning, October 1980 and the modal split assignment is from Attachment 2 supplemented by survey data collected by Environmental Science Associates, Inc.

/4/ Retail trip generation is from Trip Generation, Institute of Transportation Engineers (ITE), 1979. Rates have been adjusted from vehicle trip ends to person trip ends based upon an assumed vehicle occupancy of 1.4 persons per vehicle. The survey of retail travel was conducted by Environmental Science Associates at Embarcadero Center on Thursday, June 17, 1982 between 10:00 a.m. and 4:00 p.m.

/5/ The percentage of work and non-work trips is from the Guidelines (see note 1) and from Urban Travel Patterns for Hospitals, Universities, Office Buildings, and Capitols, Report No. 62, National Cooperative Highway Research Program.

/6/ East Bay auto occupancy is from data collected at the Bay Bridge toll plaza by the Metropolitan Transportation Commission; North Bay auto occupancy is from data collected at the Golden Gate Bridge toll plaza by the Golden Gate Bridge, Highway and Transportation District; Southern Peninsula auto occupancy is an estimate from CalTrans.

/7/ The occupancy rate is from The Downtown Traffic and Parking Study, San Francisco Department of Public Works, 1970.

/8/ Department of City Planning, Working Paper I, Projection of Long-range Transportation Demand, May, 1982, prepared in cooperation with the Metropolitan Transportation Commission (MTC), the Association of Bay Area Governments (ABAG), and the Municipal Railway (Muni). Employment trend data was compiled by ABAG from trends in County Business Pattern (U.S. Department of Commerce, Bureau of the Census, March 12, 1979), with 1979 as the base year for future projections and regional distributions. Modal split data are from the 1975 Travel Survey prepared by MTC.

/9/ The Department of City Planning, Office of Environmental Review (OER), has issued a memorandum, dated July 2, 1982, dealing with the subject of the differences in the land-use and employment trend approaches, and recommending that both approaches be used in future EIRs to give a more balanced assessment of future peak transportation demand. This memorandum is on file with and available from the Office of Environmental Review, 450 McAllister St., 5th Floor. The memorandum calls out some of the fundamental differences between the 2 approaches and also details the limitations of each approach.

APPENDIX E: SAN FRANCISCO AIR CONTAMINANT SUMMARY 1979-1981

STATIONS: 939 Ellis St. and 900 23rd St., San Francisco/a/

POLLUTANT:	STANDARD	1979	1980	1981
OZONE (Oxidant)				
1-hour concentration (ppm /b/)				
Highest hourly average	0.12 /c/	0.08	0.09	0.07
Number of standard excesses		0	0	0
Expected Annual Excess/d/		0.0	0.0	0.0
CARBON MONOXIDE/e/				
1-hour concentration (ppm)				
Highest hourly average	20	20	10	8
Number of standard excesses		0	0	0
8-hour concentration (ppm)				
Highest 8-hour average	9	9.4	13.8	7.5
Number of standard excesses		0	2	0
NITROGEN DIOXIDE				
1-hour concentration (ppm)				
Highest hourly average	0.25 /e/	0.16	0.17	0.11
Number of standard excesses		0	0	0
SULFUR DIOXIDE				
24-hour concentration (ppm)				
Highest 24-hour average	0.05 /e/	0.034	0.018	0.04
Number of standard excesses/f,g/		0	0	0
TOTAL SUSPENDED PARTICULATE				
24-hour concentration (ug/cubic meter)				
Highest 24-hour average	100 /f/	117	173	103
Number of standard excesses/h/		1	6	1
Annual concentration (ug/cubic meter)				
Annual Geometric Mean	60 /f/	42	52	56
Annual standard excess		No	No	No

/a/ In January, 1980, the monitoring functions of the Ellis St. Station were transferred to the 23rd St. Station. San Francisco data after January 1, 1980, are from 23rd St. The Ellis St. station continues to monitor for carbon monoxide. However, data collected at the Ellis station do not meet EPA or ARB criteria for representativeness.
/b/ ppm: parts per million.
/c/ National standard, not to be exceeded more than once per year (except for annual standards which are not to be exceeded).
/d/ Expected Annual Excess is a 3-yr average of annual excesses.
/e/ California standard, not to be equaled or exceeded.
/f/ Exceeding the sulfur dioxide standard is a violation only if a concurrent excess of the state ozone or suspended particulate standards occurs at the same station. Otherwise, the national standard of 0.14 ppm applies.
/h/ Number of observed excess days (measurements taken once every 6 days).
/i/ ug: micrograms.

SOURCE: BAAQMD, 1979 - 1981, Contaminant and Weather Summaries.

APPENDIX F: FUNDAMENTAL ACOUSTICAL CONCEPTS/1/

Three characteristics of environmental noise are important in determining subjective response: the intensity or level of the sound, the frequency spectrum of the sound, and the time-varying character of the sound.

Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. Sound levels are usually measured and expressed in the logarithmic scale of decibels (dB), with 0 dB corresponding roughly to the threshold of hearing. Measurements in decibels must be added according to logarithmic rules; for example, 2 individual 80 dB sounds occurring simultaneously create a composite sound level of 83 dB.

The "frequency" of a sound refers to the number of complete pressure fluctuations per second in the sound. The unit of measurement is the cycle per second (cps) or Hertz (Hz). Most of the sounds which we hear in the environment do not consist of a single frequency, but of a broad band of frequencies, differing in sound level. The quantitative expression of the frequency and level content of a sound is its sound spectrum. A sound spectrum for engineering purposes is typically described in terms of octave bands which separate the audible frequency range (for human beings, from about 20 to 20,000 Hz) into 9 segments.

Many rating methods have been devised to permit comparisons of quite different sounds. Fortunately, the simplest method correlates with human response almost as well as the more complex methods (Parkin 1964 and Botsford 1969). This method consists of evaluating the content of a sound in accordance with a weighting that reflects the fact that human hearing is less sensitive at low frequencies and extreme high frequencies than in the frequency midrange. The weighting curve used is called "A" weighting, and the level so measured is called the "A-weighted sound level", or simply the "A-level".

The A-level in decibels is expressed as "dBA"; the appended letter "A" is a reminder of the particular kind of weighting used for the measurement. Typical A-levels measured in the environment and in industry are shown in Table 1.

Although the A-level may adequately describe environmental noise at any instant in time, community noise level varies continuously. Most environmental noise includes a conglomeration of distant noise sources which creates a relatively steady background noise in which no particular source is identifiable. These distant sources may include traffic, wind in trees, industrial activities, etc. These noise sources are relatively constant from moment to moment, but vary slowly as natural forces change or as human activity follows its daily cycle. Superimposed on this slowly varying background is a succession of identifiable noisy events, which may include single vehicle passages, aircraft flyovers, etc.

To describe the time-varying character of environmental noise, the statistical noise descriptors L10, L50, and L90 are commonly used (Kittelson, et al., 1964, Griffiths, et al., 1968, Olson 1970, Scholes 1970, Gordon, et al., 1971). The L10, as used in this report, is the A-weighted sound level equaled or exceeded during 10% of a stated time period. The L10 is considered by noise engineers to be a good measure of the "average peak" noise. The L50 is the A-weighted sound level that is equaled or exceeded 50% of a stated time period. The L50 represents the median sound level. The L90 is the A-weighted sound level equaled or exceeded during 90% of a stated time period. The L90 is used to describe background noise.

As it is often cumbersome to describe the noise environment with these statistical descriptors, a single number descriptor called the Leq is becoming widely used. The Leq is defined as the equivalent steady-state sound level which in a stated period of time would contain the same acoustic energy as the time-varying sound level during the same time period. The Leq is particularly useful in describing the subjective change in an environment where the source of noise remains the same but there is change in the level of activity. Widening roads and/or increasing traffic are examples of this kind of situation.

During nighttime hours, exterior background noise levels are generally lower than daytime levels. Most household noise also decreases at night, and exterior noises become very noticeable. Further, most people are sleeping at night and are very sensitive to noise intrusion.

To account for human sensitivity to nighttime noise levels the descriptor Ldn (day-night equivalent sound level) was developed. The Ldn is the A-weighted average sound level in decibels during a 24-hour period with a 10 dB weighting applied to nighttime (10:00 p.m. to 7:00 a.m.) levels. For highway noise environments the Leq during the peak traffic hour is approximately equal to the Ldn.

The effects of noise on people may be listed in 3 general categories:

1) subjective effects of annoyance, nuisance, dissatisfaction;
2) interference with activities such as speech, sleep, learning,
3) physiological effects such as startle, hearing loss.

The sound levels associated with environmental noise, in most cases, produce effects only in the first 2 categories. Unfortunately, there is as yet no satisfactory measure of the subjective effects of noise, or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance, and habituation to noise over differing individual past experiences with noise (Stevens, et al., 1955).

An important parameter in determining a person's subjective reaction to a new noise is the existing noise environment to which one has adapted: the so-called "ambient" noise. "Ambient" is defined in the San Francisco Noise Ordinance as "the all-encompassing noise associated with a given environment, being a composite of sounds from many sources, near and far" (S.F. Municipal Code 1972). In general, the more a new noise exceeds the previously existing ambient, the less acceptable the new noise will be judged by the hearers (Galloway, et al., 1969).

Knowledge of the following relationships will be helpful in understanding the quantitative sections of the EIR (Stevens, et al., 1955, Beranek 1954):

1) Except in carefully controlled laboratory experiments, an increase of only 1 dB in A-level cannot be perceived.
2) Outside of the laboratory, a 3 dB increase in A-levels is considered a just-noticeable difference.
3) A change in A-level of at least 5 dB is required before any noticeable change in community response would be expected.
4) A 10 dB increase in A-level is subjectively heard as approximately a doubling in loudness, and would almost certainly cause an adverse change in community response. Increases of more than 10 decibels would be expected to provoke complaints.

BIBLIOGRAPHY

Beranek, L. L., Acoustics (New York: McGraw-Hill) (1954).

Botsford, J. H., "Using Sound Levels to Gauge Human Response to Noise", Sound and Vibration, 3(10):16-28 (1969).

Gordon, C. G., et al., "Highway Noise--A Design Guide for Highway Engineers", National Cooperative Highway Research Program, Report 117 (1971).

Griffiths, I. D., and F. J. Langon, "Subjective Response to Road Traffic Noise", Journal of Sound and Vibration, 8(1):16-32 (1968).

Kittelson, K. E., and C. Poulsen, "Statistical Analysis of Sound Levels", Bruel & Kjaer Technical Review, 1:3-23 (1964).

Olson, N., "Statistical Study of Traffic Noise", Ottawa: National Research Council of Canada, Report APS476, N.R.C. 11270 (1970).

Parkin, P. H., "On the Accuracy of Simple Weighting Networks for Loudness Estimates of Some Urban Noises", Journal of Sound and Vibration, 2(1):86-88 (1964.

San Francisco Municipal Code, Part II, Chapter VIII, Section 1, Article 29, Noise Abatement and Control Ordinance (1972)

Scholes, W. E., "Traffic Noise Criteria", Applied Acoustics, 3(1):1-21, (1970).

Stevens, K. N., et al., "A Community's Reaction to Noise: Can It Be Forecast?", Noise Control, 1:63 (January 1955).

NOTE -

/1/ Modified from Salter, Charles M. Associates Inc., May 1979, "Appendix M: Fundamental Acoustical Concepts" in San Francisco City Planning Commission, Environmental Impact Report for 101 California Street, EE 78.27.

TABLE I: TYPICAL SOUND LEVELS MEASURED IN THE ENVIRONMENT AND IN INDUSTRY

Emergency Engine-Generator (6')	A-Weighted Decibels A-Weighted	Minimum Levels, Residential Areas
Civil Defense Siren (100 ft.)	140	
Jet Takeoff (200 ft.)	130	Threshold of Pain
	120	
Riveting Machine	110	Rock Music Band
Emergency Engine-Generator (6 ft.) DC-10 Flyover (700 ft.)	100	Pile Driver (50 ft.)
Subway Train (20 ft.)	90	Boiler Room Printing Press Plant
Pneumatic Drill (50 ft.)	80	Garbage Disposal in Home (3 ft.) Inside Sports Car, 50 mph.
Freight Train (100 ft.) Vacuum Cleaner (10 ft.) Speech (1 ft.)	70	
	60	Auto Traffic near Freeway Large Store Accounting Office
Large Transformer (200 ft.)	50	Private Business Office Light Traffic (100 ft.) Average Residence
	40	Minimum Levels, Residential Areas in San Francisco at Night
Soft Whisper (5 ft.)	30	
Rustling Leaves	20	Recording Studio
	10	
Threshold of Hearing in Youths (1000-4000 Hz)	0	

NOTE: The distance (in ft.) between the source and listener is shown in parentheses.

SOURCE: Charles M. Salter Associates, Inc.

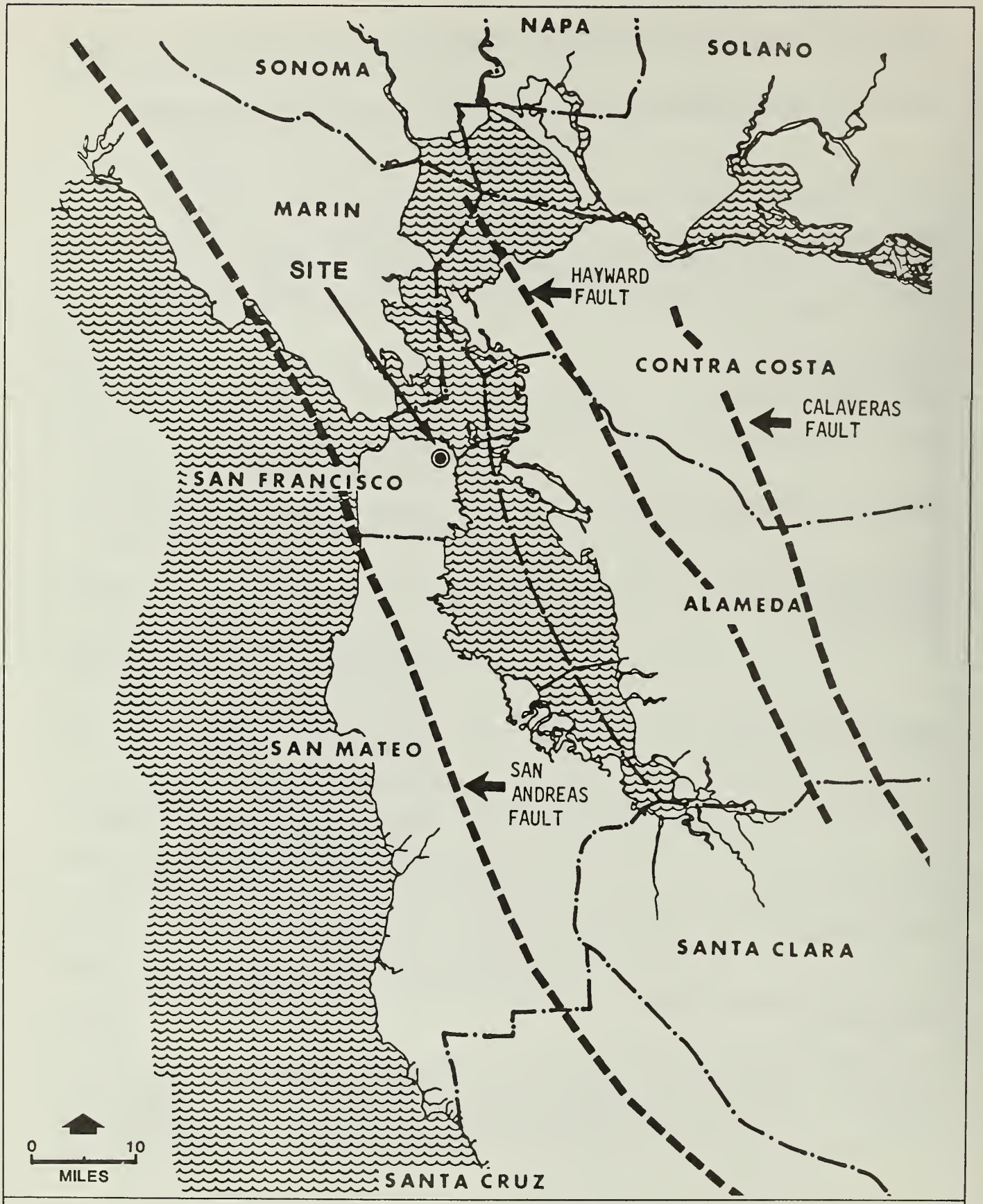


FIGURE G-1: Major Active Faults in the San Francisco Bay Area

SOURCE: California Division of Mines and Geology

LEGEND

— — — Approximate Boundaries

FIGURE G-2: Major Shear Zones in San Francisco